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Collateral Duty Job Satisfaction Among Coast Guard Aviators

by

Robert James Morrison, Jr.
Lieutenant Commander, United States Coast Guard
B.S., United States Coast Guard Academy, 1977

Submitted in partial fulfillment
of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

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NAVAL POSTGRADUATE SCHOOL
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This research sought to determine if collateral duty job satisfaction is related to a Coast Guard aviator's career satisfaction and retention plans, which are the most and least satisfying collateral duties, and if various job, management, and individual characteristics are related to collateral duty satisfaction. Data were obtained from a questionnaire which was sent to all duty-standing pilots at Coast Guard air stations. Using statistical analysis techniques and reviews of qualitative comments, the data were analyzed and results obtained.

Collateral duty satisfaction is fairly strongly related to career satisfaction, and to a less degree, retention plans. Aviators tend to be positively satisfied with their collateral duty, with the Engineering department offering the most satisfying collateral duties while the Administration department tends to offer the least, but still positively, satisfying collateral duties. Job and management characteristics are very influential on collateral duty satisfaction, and while the influence of various characteristics vary among officer rank, the five most influential characteristics for Coast Guard aviators overall are autonomy, task significance, being able to influence which collateral duty is assigned, leadership opportunities, and satisfaction with the supervisor.

While collateral duty satisfaction tends to be positive, aviators are dissatisfied by the conflict resulting from not having enough time to maintain proficiency in both aviation (primary) and collateral duties.

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COLLATERAL DUTY JOB SATISFACTION
AMONG COAST GUARD AVIATORS

by

Robert James Morrison, Jr.

December, 1991

Thesis Co-Advisors: Susan Page Hocevar
James E. Suchan

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I. INTRODUCTION

The concept of continuous improvement has been embraced by the Commandant of the U.S. Coast Guard. Indeed, the opening sentence of the Commandant's Vision Statement starts with "The United States Coast Guard is committed to continuous improvement ...." The essence of continuous improvement has perhaps been stated best by Tom Peters, a well known author and management consultant. He proposes replacing the old saw "If it ain't broke, don't fix it" with "If it ain't broke, you just haven't looked hard enough." (Peters 1988)

There are many areas for improvement within the Coast Guard, but this research focuses on the collateral duty satisfaction of Coast Guard aviators. The overall purpose of this research is to identify areas for improvement in aviation collateral duties. This research determines if collateral duty satisfaction is related to career satisfaction and retention, identifies which collateral duties are the most and least satisfying, provides explanations for the variations in satisfaction, and proposes improvements.

A. COAST GUARD AVIATION

The missions of Coast Guard aviation include, but are not limited to, search and rescue, maritime law enforcement, marine environmental protection, aids to navigation, and defense operations. To accomplish these and other missions, the Coast Guard has established air stations along the Pacific and Atlantic Oceans, Gulf of Mexico, and Great

Lakes. These air stations range in size from only three similar aircraft to fifteen or more aircraft of various types.

Air stations are organized such that the Commanding Officer and Executive Officer supervise several departments. These departments are usually functionally organized, such as Administration, Engineering, Operations, Public Works, Safety, and Supply. Most departments are subdivided into divisions, which are also functionally organized units. For example, divisions within the Operations department may include Communications and Flight Services.

Some of these air stations are co-located with Coast Guard groups. A group is essentially a small "headquarters" for other subordinate units, such as small boat stations, within a certain geographic area. In addition to the normal duties of an air station, a combined group-air station has the additional operational and support responsibilities for these subordinate units.

The aviators assigned to air stations are assigned to two broad categories, duty-standing and command and control. The command and control aviators are the Commanding Officer, Executive Officer, Operations Officer and, at large air stations, the Engineering Officer. Their primary duty is to manage the air station so that the assigned missions are efficiently completed.

The duty-standing aviators are the majority of the officers who are assigned to the air station primarily to fly the aircraft. They are the pilots and flight officers who stand duty every third or fourth day, and, along with the enlisted aircrewmen, actually perform the missions.

B. COLLATERAL DUTIES

Collateral duties are those jobs an aviator is assigned and responsible to complete when not actively engaged in flight operations. These duties exist to support the aviators, air station, and group in accomplishing their missions. Examples of collateral duties are the Administration Officer, Public Works Officer, and Educational Services Officer (ESO). The majority of an aviator's work time is spent on collateral duties rather than flight duties.

As a rule, Coast Guard aviators enjoy the various missions of Coast Guard aviation. Notably, there are differences in aviator attrition rates between other military services and the Coast Guard. In the late 1980s (during an airline hiring boom), the Navy and Air Force attrition rates for aviators were over 30 percent, while the Coast Guard never exceeded eight percent (Grossman 1989, Ginovsky 1990, U.S. Congress, House 1990). Indeed, the results of this research indicate that over forty percent of Coast Guard duty-standing aviators started their aviation careers in another military service, resigned, and joined the Coast Guard. However, some Coast Guard aviators still voluntarily leave the service, and this is an acknowledged and costly problem.

C. ORGANIZATION OF STUDY

The second chapter of this thesis reviews the literature and theories involving job satisfaction and job design. The theoretical model upon which much of this research is based is discussed, as are previous studies of Coast Guard officers and aviators. The five fundamental questions of this research are also identified.

Chapter III reviews the methodology used in this research. The target population is described as is the survey questionnaire used to gather the data. The problems associated with identifying collateral duties and the solutions used in this research are explained. The methods used in analyzing the data are also discussed.

The analysis, results, and discussion of the survey data is described in Chapter IV. Each research question is answered, and major characteristics which influence collateral duty satisfaction are identified. Chapter V summarizes these results, makes recommendations for improvement, and provides areas for further research.

II. LITERATURE REVIEW

This thesis examines the satisfaction a Coast Guard aviator derives from collateral duties. While job satisfaction has many sources, this thesis is primarily concerned with whether the job itself provides satisfaction, and if it does, what aspects of the job create this sense of satisfaction. A review of job design literature and previous studies of Coast Guard officers will provide the necessary background to understand the theoretical foundation of this research.

The first part of this chapter examines various job design theories. Then the Job Characteristics model, the model upon which this research is designed, is discussed. Previous studies of Coast Guard officers are then reviewed to determine background information and key assumptions. Finally, this chapter concludes by asking the basic research questions which provide the framework for this thesis.

A. THEORIES OF JOB SATISFACTION THROUGH JOB DESIGN

Job satisfaction, as defined by Locke (1976), is a "positive emotional state resulting from the appraisal of one's job or job experiences." There are many sources of job satisfaction, such as pay, security, recognition, and the work itself. Work design is the source of job satisfaction that this thesis focuses on, and is defined as the "activities that involve alteration of specific jobs (or systems of jobs) with the intent of improving both productivity and the quality of employee work experiences" (Hackman 1979). The terms job design and redesign will be used interchangeably throughout this research, and are based on the above definition.

There are three major approaches to job design: scientific management, behavioral, and sociotechnical approaches.

1. Scientific Management

This school of thought was originated by Frederick W. Taylor, who, in 1911, published the first major theory of job satisfaction and job design. His theory is generally referred to as "scientific management". This theory relates job satisfaction to rewards alone. According to Taylor, a worker obtains job satisfaction by having management carefully determine the specific components which comprise a task, measure the optimal amount of work an individual is capable of doing, assign one worker to each component, and then pay the worker very well to do the task.

Scientific management embraces a mechanistic approach to job design in that workers are regarded merely as mechanical tools. This approach was very popular in newly industrialized, mass production plants, and is epitomized by the assembly line. Efficiency in production in mechanistically designed jobs initially tends to increase because there is less chance for human error. As a result, it is a very effective job design in areas that have a low tolerance for errors, such as maintaining aircraft or handling classified material. The use of checklists and standard operating procedures throughout Coast Guard aviation maintenance and in handling classified material is an example of this approach to job design.

The major flaw with this theory is that it tends to ignore the psychological needs of the workers who perform the job. Workers performing highly specialized and repetitive tasks soon become bored and dissatisfied. This was demonstrated in 1972 by the highly publicized labor strike in Lordstown, Ohio. Although Lordstown's GM plant was the most modern automobile plant ever designed using the principles of scientific management, the auto workers sabotaged cars, turned down overtime, and eventually went on strike demanding they not be treated as machines. Work design, not money, was the key issue.

2. Behavioral Theories

The behavioral theories of job design emphasize the human aspects that scientific management ignores. Although not explicitly a work redesign theory, Abraham H. Maslow's theory of human satisfaction influenced many work redesign and motivation theories.

Maslow's theory states there is a hierarchy of human needs. These needs, ranked from lowest to highest, are physiological, safety, belongingness and love, esteem, and self-actualization (Maslow 1954). According to this theory, one cannot attain higher order needs until lower needs are met. While not specifically stated, this theory implies that rewards from work must be relevant to the needs of the worker to be satisfying (Mortimer 1979).

However, subsequent research studies have shown, and Maslow himself has agreed, that fulfilling lower needs is not necessarily essential prior to fulfilling a higher need. Individuals can have varying needs fulfilled at various times; need fulfillment does not necessarily follow a strict hierarchy. Despite these findings, the theory is still quite influential.

In 1959, Frederick Herzberg proposed the "two-factor" or "motivator-hygiene" theory of work motivation. The essence of this theory is that there are two types of job experiences, satisfiers (or motivators) and "hygiene factors". Satisfiers are experiences intrinsic to the work itself, such as achievement, recognition, and responsibility, while hygiene factors are extrinsic to the work and include supervision, work conditions, and policies. Job satisfaction is determined by the presence of satisfiers, and when satisfiers are designed into a job, the job is "enriched". The presence of hygiene factors are not necessarily satisfying, but their absence is dissatisfying. (Herzberg 1976)

While elegant, Herzberg's theory has not been fully confirmed. There have been many studies which indicate that pay, and other extrinsic concerns, are significant factors in job satisfaction. Indeed, recent studies of Coast Guard officers determined that extrinsic factors such as promotion and pay are among the ten most commonly mentioned sources of job satisfaction (Mizell 1983, Hasselbalch 1990). Thus, while they focus on the human aspects of a job, the behavioral theories do not fully explain how job satisfaction is attained.

3. Sociotechnical Theory

This theory explains how both the social and technical aspects of a job determine job satisfaction. The theory states the task itself (the technical aspects of work) and the relationships with other workers (the social aspects) are interdependent, and the internal environment of the organization (e.g. the group norms and culture) plays a central role. Sociotechnical theory is characterized by an emphasis on teams or work groups that share responsibility to complete meaningful tasks. This is a systems approach in which one component cannot be changed without affecting all the other components. The goal of sociotechnical work design is to have the social and technical aspects "jointly optimized," rather than optimizing the technical system at the expense of the social system or vice versa. (Hackman 1979, 1980)

A disadvantage of this theory is that it is difficult to evaluate the contributions of a single component of the theory to organizational effectiveness. In a system, a change in one component influences all the other components; a single cause and effect relationship is difficult to isolate and prove.

This theory's advantage is that while it is very general, it addresses both the social and technical nature of work. In other words, the theory not only examines the social and technical systems affecting an organization, but also examines the relationships between these systems and the environment. It balances the scientific approach (technical systems) with the behavioral approach (human systems). Because of these advantages, sociotechnical theory can be easily adapted to understand and explain organizational behavior in almost any circumstance. As a result, it is the basis for a large number of organizational development models currently used by consultants.

The practical results of organizations that have adopted a sociotechnical approach to job design have been quite positive. Sherwin Williams, Proctor & Gamble, Gaines, Apple, and Zilog are just a few of the companies that have adopted sociotechnical job design and had significant increases in productivity while decreasing absenteeism and turnover rates.

One essential aspect of sociotechnical analysis is a thorough examination of the job. The instrument most often used for this examination and diagnosis is the job characteristics model.

B. JOB CHARACTERISTICS MODEL

The Job Characteristics model, a popular sociotechnical job design model, was proposed by Hackman, Oldham, Janson, and Purdy in 1975. It is based on the job characteristics theory, but also addresses the influence that management practices have on worker motivation.

The job characteristics theory is based on research done by Turner and Lawrence in 1965, and refined by Hackman and Oldham in 1976. This theory asserts that individuals will be motivated when three psychological states are obtained: they consider their work meaningful, they feel they are personally responsible for the work, and they know the results of their work. These three psychological states are created by five core job characteristics: skill variety, task identity, task significance, autonomy, and feedback. (Hackman 1979)

Skill variety is the degree to which a job requires a variety of different activities or skills to complete. Task identity is "the extent to which a job requires the completion of a 'whole' and identifiable piece of work, that is, doing a job from beginning to end, with a visible outcome." Task significance is the relative impact the job has on others.

Together, these three characteristics form the meaningfulness of work construct. (Hackman 1979)

Autonomy refers to the degree to which a job provides the worker freedom and discretion in scheduling the work and determining how to perform it. This leads to personal responsibility for the work. Feedback from the job is the extent to which a worker gets information on his or her performance from the task itself and leads to a knowledge of results.

The job characteristics model (Figure 1) embraces this theory, but goes further to provide a means to diagnose existing jobs and to translate the diagnosis into specific corrective actions (Hackman and others 1975). An eight part survey, called the Job Diagnostic Survey (JDS), was designed by Hackman, Oldham, Janson, and Purdy to measure the key elements of the job characteristics theory.

In addition to the five core job characteristics, the JDS examines two additional job characteristics to assist in diagnosing the jobs: Feedback from Agents, and Dealing with Others. Feedback from agents measures the extent to which an employee gets information about his or her performance from supervisors or other workers, while dealing with others measures how much the job depends on interactions between the worker and other people.

The JDS is not just a diagnostic tool. From the JDS data, the motivating potential of a particular job relative to other jobs can be determined. The Motivating Potential Score (MPS) takes the average score of the five core job characteristics which affect each psychological state, and multiplies these averages together for a total MPS.

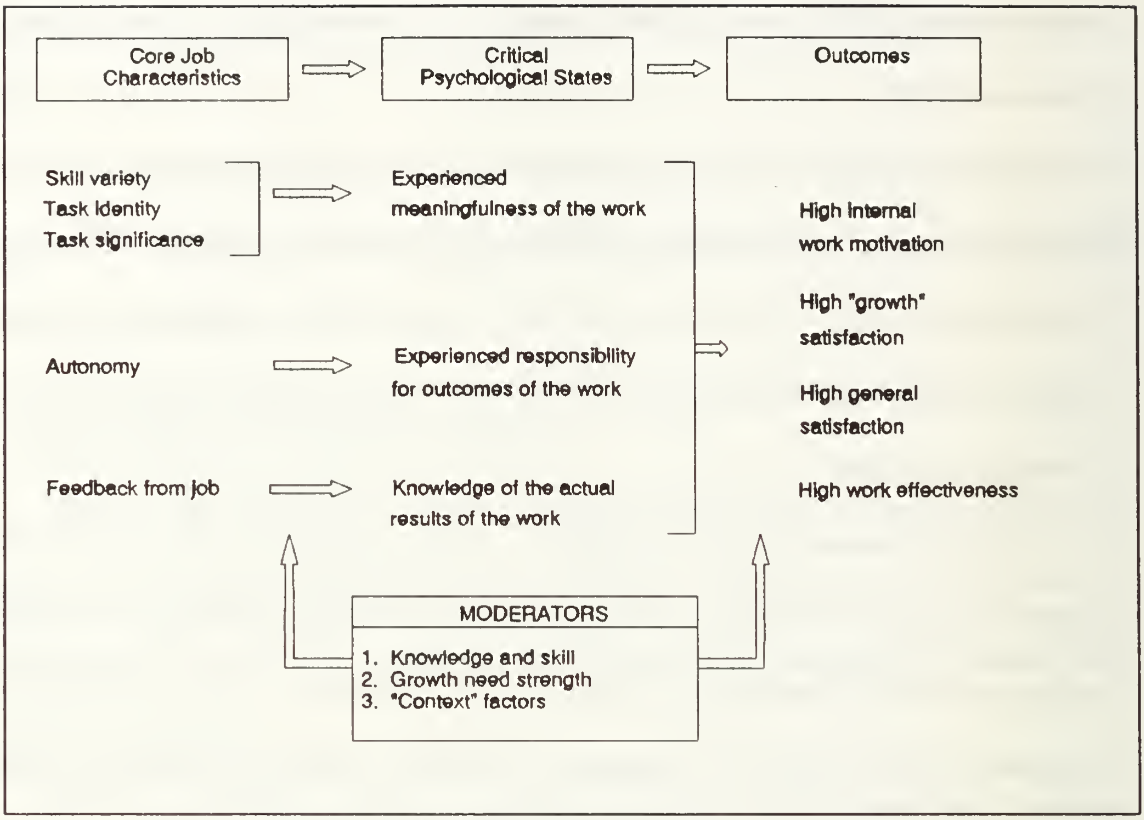

Core Job Characteristics
Critical Psychological States
Outcomes
Skill variety
Task Identity
Task significance
Experienced meaningfulness of the work
Autonomy
Experienced responsibility for outcomes of the work
Feedback from job
Knowledge of the actual results of the work
High internal work motivation
High "growth" satisfaction
High general satisfaction
High work effectiveness
MODERATORS
1. Knowledge and skill
2. Growth need strength
3. "Context" factors

Figure 1 Job Characteristics Model (Hackman 1980)

Recognizing a particular job can simultaneously be very high in one or more characteristics and quite low in others, the MPS provides a way to obtain information regarding the overall potential of the job to enhance worker motivation. These scores are multiplied because a low score on one psychological state will theoretically result in a lower motivating potential. This implies improving the scores of the other components (through job redesign) will have little effect on raising the total MPS if no actions are taken to improve the low scoring component (Dunham, 1979). Jobs with high MPS scores, i.e. those that have relatively large amounts of the five core job characteristics, are called "enriched" jobs, and are theoretically more satisfying.

A significant improvement Hackman and Oldham made to their original model was the addition of more "moderators", which account for the individual differences between people. The MPS is not a perfect predictor of motivating potential, so moderators are introduced to account for the differences between the job's potential to motivate and the actual motivation of an individual. Three individual moderators were identified: knowledge and skill, growth need strength, and "context" satisfactions. (Hackman, 1980)

When people lack the required knowledge and skill to perform well in a job with a high MPS, they tend to become frustrated and unhappy, despite the good intrinsic characteristics of the job. However, if the intrinsic motivation of the job is low, the effect of knowledge and skills (even if high) does not have much affect on motivation.

Enriched jobs tend to create opportunities for self-reliance, learning, and personal accomplishment. However, not all people respond to these opportunities in the same manner. An individual's growth need strength, i.e. their psychological need or desire for such opportunities, influences how an individual will respond to a job which has a high motivating potential. Those with a high growth need will tend to be more satisfied by enriched work, and those with a lower need will tend to be less satisfied.

Herzberg's influence on this model is apparent in the moderating effect of context factors, such as pay, promotion, and supervision on the theoretical results. For example, if a person is dissatisfied with pay, promotion, and their supervisor, his or her response to having a more complex and challenging job may not be favorable. Those who are satisfied with the context factors tend to respond favorably to enriched jobs.

Thus, this model accounts for individual differences in job satisfaction by using moderators. An enriched job should be most satisfying for people who have the knowledge and skills to perform the job, have a high psychological need for growth and learning, and are satisfied with the context of their job.

The Job Diagnostic Survey has been administered several hundred times. Moderate internal reliability for the job characteristics and significant positive correlations with intrinsic work motivation, general job satisfaction, and growth satisfaction have consistently been found. The results have indicated a linear increase in MPS from lower, middle, and upper management on the five core characteristics. (Cook and others 1981)

One weakness of this model concerns the significance of growth need strength as a moderating variable. While some studies have shown that growth need strength has a moderating effect, several others have contradicted this. This issue is not yet resolved, but it appears even those people with a low growth need strength will respond more favorably to an enriched job than a job in which the core job characteristics are low. (Dunham 1979)

Another area of discussion is the effectiveness of the Motivating Potential Score formula. The original MPS multiplies the components together. Subsequent research has shown an equally weighted additive linear model (i.e. adding, not multiplying, the components together) is at least as effective as the original MPS formula. While neither formula has been proved clearly superior, the implications of an additive model are quite different from the original theory. If a job component had a low score which could not be raised, the additive model implies the overall score (worker response) for a job could still be significantly improved by improving the other components. This is contrary to the original implications that all components must be raised to significantly improve worker response. (Dunham 1979)

There are constant efforts to better refine and revise the JDS and other surveys which seek to measure job characteristics, such as the Sims' Job Characteristics Inventory and Stone's Job Scope construct (Cook et al. 1981). The latest research by Kulik et al. (1988) has indicated the original JDS is still valid. Despite the questions raised above, the JDS is a proven tool for job diagnosis and measurement of job characteristics (Cook et al. 1981).

This research is based on the job characteristics model and resultant JDS, which have proved to very effective in diagnosing and evaluating the motivating potential of job design. The specific jobs being evaluated in this research are the collateral duties of Coast Guard aviators. The following review of previous studies of Coast Guard aviators and officers provides some additional background relevant to this research.

C. STUDIES OF COAST GUARD OFFICERS

In 1981, Coast Guard Lieutenant Dana Goward theorized that some Coast Guard aviators tend to view themselves as pilots first and officers second; consequently, these aviators are interested in a career path that would assure they could fly their entire career. This study indicated that approximately 20 percent of the Coast Guard aviators would prefer to become Limited Duty Officers (LDOs). whose primary job would be to fly Coast Guard aircraft. The LDO program is a concept which assumes that collateral duties for LDOs would be reduced to only those directly involved with aviation. However, LDOs would not be promoted beyond Lieutenant Commander (pay grade O-4). (Goward 1981)

What is most important to this thesis is the alternative conclusion that about 80 percent of Coast Guard aviators were not interested in such a program. Evidently flying did not satisfy all the needs and desires of a Coast Guard career for the majority of aviators in 1981.

A 1990 survey of Coast Guard officers, not just aviators, identified 10 major sources of career satisfaction. The top five factors were intrinsic to the work itself: recognition, challenge, enjoyable job, job freedom (autonomy), and meaningfulness. The next two major sources of career satisfaction were context factors, promotion and pay. Thus, intrinsic motivators, those which can be designed into a job, have been identified as critical factors for a satisfying Coast Guard career. (Hasselbalch 1990)

Goward's study of Coast Guard aviators supports the conclusion that there is more to career satisfaction than just flying. Since collateral duties occupy a significant portion of an aviator's time at work, one can infer from Goward's study that collateral duties are a source of career satisfaction. Hasselbalch's study of Coast Guard officers has shown the intrinsic characteristics of a job are important factors in career satisfaction. Based on the Job Characteristics model, and these conclusions, this thesis will address the following research questions.

D. RESEARCH QUESTIONS

There are five basic questions which this research will answer:

1. Research Question 1

Is there a relationship between collateral duty satisfaction and career satisfaction and retention? This question is of interest, for the economic costs of undertaking a job redesign may not be worth the benefits of increased retention if there is no significant relation between them.

2. Research Question 2

What collateral duties are the least (and most) satisfying? The fundamental purpose of this research is to determine which collateral duties may be in need of job redesign.

3. Research Question 3

Is there a relation between job characteristics and collateral duty satisfaction? If the data support the job characteristics theory, the work design diagnosis should apply, and assist in diagnosing why some collateral duties are not satisfying.

4. Research Question 4

Is there a relation between collateral duty management and collateral duty satisfaction? This question is of interest to local supervisors. A known relation between collateral duty management (such as the number of duties per individual and feedback from supervisors) and collateral duty satisfaction may make supervisors more aware of their influence on their subordinates

5. Research Question 5

What, if any, individual characteristics are related to collateral duty satisfaction? Again, this question is of interest especially to local supervisors. Given aviators come from many various backgrounds, any relation between individual characteristics and collateral duty satisfaction may assist in placing aviators to existing collateral duties.

These five questions will lead to other related questions which are omitted here, but will be addressed, along with the above questions, in Chapter IV. The next chapter will discuss the methodology used and assumptions made in conducting this research.

III. METHODOLOGY

A. INTRODUCTION

This chapter describes the methodology used to conduct this research. As previously discussed, the purpose of this research is to determine the most and least satisfying collateral duties for Coast Guard aviators, and to explain why some duties are more satisfying than others. To accomplish this, a survey questionnaire was constructed, distributed to the target population, administered, and finally analyzed.

The remainder of this chapter examines the target population, the questionnaire used in the survey and the characteristic variables which were determined from it, how collateral duties were identified, and how the data were analyzed.

B. TARGET POPULATION

The target population of this research was the duty-standing Coast Guard aviators who perform collateral duties at operational Coast Guard air stations. These are the officers whose primary duty is to fly Coast Guard aircraft and actually perform the various missions of Coast Guard aviation.

Only those aviators from operational air stations were included. The aviators assigned to staff billets, Headquarters units (such as the Aviation Training Center and Aviation Repair and Supply Center). and Coast Guard Air Station Washington (a special mission air station) were not included. Although some of these officers do perform collateral duties which are similar to those performed by their peers at operational air stations, the missions of these units are distinctively different from those of operational air stations.

A list of aviators and their current air stations was obtained by using the Personnel Management Information System (PMIS) database at Coast Guard Headquarters in Washington, DC. Because the survey was being conducted during the summer transfer season, each air station was called a few days prior to mailing the surveys to make any corrections to the mailing list. A cover letter which solicited the support of the aviators and explained the fundamental purpose of this research, how to complete the survey, and the when the survey data analysis would begin was included in the survey packages. Each survey package consisted of the cover letter, the survey questionnaire, answer sheet, and pre-addressed, postage paid return envelope.

Six hundred and six survey packages were mailed in late July and 457 were returned by the end of September. The high response rate of over 75 percent is perhaps indicative of the interest Coast Guard aviators have in the subject of collateral duties.

C. QUESTIONNAIRE

The data used for this research were obtained from a questionnaire consisting of 56 questions. Appendix A contains both the cover letter and survey questionnaire sent to the population. The questions solicited information regarding the participant's background, career satisfaction, collateral duty satisfaction, officer/pilot orientation, and other factors regarding collateral duties.

The majority of the questions on this questionnaire were taken from Hackman and Oldham's Job Diagnostic Survey. These JDS questions measured the five core job characteristics, the two additional diagnostic characteristics (dealing with others and feedback from agents), and the supervisory and coworkers context moderators. At least three different questions were used to identify each one of these characteristics and moderators.

Minor modifications were made to the original JDS questions. The original JDS descriptors are anchored on a seven point Likert scale, with descriptors placed at the values of "1", "4", and "7". This questionnaire used a five point Likert scale, using a slightly abbreviated version of the original descriptors at the values of "1", "3", and "5". New descriptors for the values of "2" and "4",which were modified from Stone's Job Scope construct, were added (Cook et al. 1981). Additionally, the word "job" used in the original JDS questions was replaced by the words "collateral duty".

In addition to certain items from the JDS, the questionnaire repeated two questions from Goward's research to measure the officer-aviator attitude of the current population. The remaining questions were constructed to gather each individual's background information, identify their collateral duty, and obtain other pertinent information. Scaled variables used in the statistical analysis of the data were formed from the survey questions, and are listed in Table I. Each scaled variable was calculated by adding the component items and dividing by the number of component items. Individual items were reverse coded before scaling as necessary.

TABLE I VARIABLES USED IN STATISTICAL ANALYSIS

Variable	*Description*	*Survey Question*
RANK	Rank	1
SOURCE	Commissioning source	2
AGE	Age	3
QUAL	Aviator qualification	4
CARSATIS	Career satisfaction	5,8
RETIRE	Intention to retire	7
OFF_AV	Officer or aviator	9
NO_CD	Number of CDs	10
OERBAL	OER balanced with CD/flying	11
CDINFL	Influence of CD on career satis	12
CDTIME	How long had CD	13
CGASIZE	Size of air station	14
DEPT	Department CD is assigned	15,16
LEVEL	Level of CD within dept	17
CDASSIGN	Influence on CD assignment	18
VARIETY	Task variety	19,43*,51
TASKID	Task identification	20,41,47*
AFEEDBAK	Feedback from agents	21,40*,53
TASKSIG	Task significance	22,36,52*
DEALOTH	Dealing with others	23,39,43*
AUTONOMY	Autonomy	24,37,48*
JFEEDBAK	Feedback from job	25,35,42*
COWORK	Coworkers (context)	26,30,34
SUPER	Supervisor (context)	27,29,31, 32,34
LEAD	CD leadership/mgmt opportunity	28,54
CDSATIS	Satisfaction with CD	38,55*
PRO_AV	CD relates to aviation skills	45
PRO_OFF	CD relates to officer skills	46
AVKSA	CD requires aviator skills	49
OFFKSA	CD requires officer skills	50
INTEREST	Interest in feedback of research	56
ID	Number of record (1-457)	

Notes: * - indicates reverse scoring
CD - collateral duty

D. COLLATERAL DUTY IDENTIFICATION

The identification of collateral duties presented a problem. Most officers have more than one collateral duty, but this survey asked them to focus on only one duty. Also, while the names of the collateral duties tend to be somewhat standardized across air stations, the duties actually required are not. At small air stations, functions may be consolidated into a generic collateral duty, such as the assistant administrative officer, while at large units these same functions may be identified as specific collateral duties and assigned to different individuals who report to the assistant administrative officer.

Collateral duties are also based on the particular mission of the air station, and may be one of a kind, such as the duties associated with Operation Bahamas and Turks and Caicos (a special law enforcement mission) which exist solely at Air Station Clearwater. Also, departments with different names may have similar functions at different air stations, and vice versa. For example, civil engineering duties may be handled by the Public Works department at one air station, and by the Group Engineering department at a combined Coast Guard Group and Air Station. At most air stations, the Engineering department is assumed to handle only aircraft maintenance and aeronautical engineering matters, and is not responsible for civil engineering.

This research tackled these problems of collateral duty identification by grouping collateral duties using three different methods. The first method categorizes all collateral duties by department, the second categorizes by department and level within that department, and the third categorizes by specific collateral duties as identified by the respondents.

The first method combined all the collateral duties in a particular department to form an overall picture of that department. This ensured a relatively large sample size, so the statistical reliability of the analysis by department is fairly high. Departments were identified from the survey data.

The standard departmental organization of Coast Guard air stations as stated in COMDTINST M3710.1B, the Coast Guard Air Operations Manual, was assumed. A department response of "other", followed by a fill-in area to specify the department name, was designed in the survey to catch any unique departmental organizations. Only 18 "other" responses were made. Only three questionnaires were returned from officers assigned to the NAFA department, and one questionnaire was returned from an aviator assigned to a Medical department. These were also included in the "other" category. Because this is a miscellaneous collection of departments, the "other" department is not included in the analysis of departments.

A disadvantage of this method of grouping duties is that the information regarding more specific collateral duties within the departments is lost. This method is good for general comparisons between departments, but does not really specify any collateral duties.

The second method provides more specific information, while still maintaining a relatively large sample size for each category. Duties were grouped by department and the level of the chain of command within that department. This provides identification of collateral duties for the upper levels of the department (the department head and assistant department head) as usually only one individual is assigned to these levels.

However, at the division officer level and below, many specific collateral duties were again merged together to form a more general picture. For example, Law Enforcement and Communications may be two separate divisions of the Operations department, but because they are both at the same level of the chain of command within the same department, the analysis of data reflects the assumption that these are the same collateral duty.

The sample sizes resulting from this categorization method are smaller than the previous method. This is because this survey focused on only one of the many collateral duties an aviator may be assigned. As the number of collateral duty groupings increase, the number within each group decreases. However, over 75 percent of the population responded to this survey, so this method of grouping provides adequate sample sizes for most duties and yields useful information regarding specific collateral duties.

To get the specific information about collateral duties at and below the division level, the survey had a fill-in-the-blank area for respondents to write the name of the specific collateral duty for which they completed the survey. However, only about 25 percent of the respondents wrote down this information. From this limited information, collateral duties which are assumed to be relatively standardized, such as the Educational Services Officer (ESO) and Flight Schedules officer, and had three or more responses, were analyzed separately.

While this provides information on very specific collateral duties, the analysis must consider the statistical inference problems associated with a small sample size. For example, if one ESO reported very high satisfaction from the job, another reported very low satisfaction, and a third reported neutral satisfaction, the reported mean satisfaction would indicate relatively neutral satisfaction overall, although though the majority (two of the three officers) definitely did not have neutral satisfaction.

E. ANALYSIS

Participants were requested to mark their answers to the questions on a Trans-Optic General Purpose answer sheet, which made coding the results very quick and accurate. Hand written comments, which were made on approximately 24% of the returned questionnaires, were analyzed separately. The answer sheets were processed using the NCS OpScan 5 hardware and ScanTools release 2.4a software located at the Defense Manpower Data Center in Monterey, CA.

These data were examined for errors such as multiple responses and incomplete erasures, and corrections made using the original answer sheets. The survey results for each question and basic descriptive statistics are included in Appendix B.

The processed data were uploaded to the Amdahl 5990 mainframe computer at the Naval Postgraduate School for analysis. Fifty of the 457 data records stored in the mainframe were selected at random for a quality control comparison with the original answer sheets. Each record had 59 fields (responses to 56 survey questions plus control information). A total of 2950 fields were examined; no errors were detected.

As indicated in Table I, several of the variables of special interest, such as collateral duty satisfaction (CDSATIS), career satisfaction (CARSATIS) and the core job characteristics were obtained by taking the mean value of the associated questions.

Multiple questions regarding these variables were asked to increase the construct validity of the variables (i.e. increase the probability that what was actually measured was what was desired to be measured). A measure of the internal consistency reliability of these variables, called Cronbach's Alpha, was obtained using version 4.0 of the Statistical Package for Social Sciences PC Plus (SPSS PC+) software. These results are listed in Table II.

TABLE II RELIABILITY OF VARIABLES

Variable	*Alpha Coefficient*
AUTONOMY	.7929
TASKID	.8030
AFEEDBAK	.8307
TASKSIG	.7960
DEALOTH	.7485
JFEEDBAK	.8026
COWORK	.6718
SUPER	.9129
LEAD	.7880
CARSATIS	.6300
CDSATIS	.6199

The statistical analysis software used in this research was Statistical Analysis System (SAS) version 5.18, which was installed on the mainframe computer at the Naval Postgraduate School.

Relationships between collateral duty satisfaction and other variables were analyzed using Pearson correlation coefficients, commonly referred to as r values. By definition, r values range between 1.0 (perfectly correlated) and 1.0 (perfectly negatively correlated), with a value of 0.0 indicating no linear relationship at all. A matrix of r values, corresponding levels of significance (α), and the number of observations for each variable is included in Appendix C. One important fact to remember throughout any correlation analysis is that correlation does not necessarily mean causation. A reasonable theory must be used to make any conclusions about the cause of strong correlations.

To determine the reasons why one collateral duty is reportedly more satisfying than another, variables from the survey data that are associated with job characteristics, management characteristics, and individual characteristics were identified. These variables are listed in Table III.

TABLE III VARIABLES GROUPED BY CHARACTERISTIC

Job Characteristics	*Management Characteristics*	*Individual Characteristics*
VARIETY	SUPER	RANK
TASKID	COWORK	AGE
TASKSIG	CDTIME	SOURCE
AUTONOMY	CDASSIGN	OFF_AV
JFEEDBAK	NO_CD	QUAL
AFEEDBAK	OERBAL	
DEALOTH		
LEAD		
PRO_AV		
PRO_OFF		
AVKSA		
OFFKSA		

The variables used to identify job characteristics include the five core characteristics from Hackman and Oldham's model (variety, task identity (TASKID), task significance (TASKSIG), autonomy, and feedback from the job (JFEEDBAK) and the two diagnostic job characteristics from the Job Description Survey (feedback from agents (AFEEDBAK) and dealing with others (DEALOTH). Five variables were created for this research to measure the leadership opportunities (LEAD), the professional development as an officer and aviator (PRO_OFF and PRO_AV), and the officer and aviator knowledge, skills, and abilities required in the job (OFFKSA and AVKSA).

The management characteristics are designed to capture some of the influences on collateral duty satisfaction that a supervisor can control. Included are the SUPER and COWORK context moderators from the Job Characteristics Model, which describe the satisfaction of an individual toward his or her supervisor and coworkers. The other management variables identify how long an individual has had a duty (CDTIME), how much influence the individual had on being the assigned collateral duty (CDASSIGN, i.e. volunteered or directed), how many collateral duties an individual is assigned (NO_CD), and how the Officer Evaluation Reports (OERs) balance primary and collateral duties (OERBAL).

The individual characteristics are those variables which describe the individual performing a collateral duty. These include rank, age, commissioning source (SOURCE), officer-aviator orientation (OFF_AV), and aviator qualification (QUAL).

To assist in the comparison of these variables within groupings of collateral duties, several analysis of variance (ANOVA) F-tests and subsequent t-tests were performed. The F-tests determined if a collateral duty (as identified by department, department and level, or by specific duty) had a significant effect on the relevant dependent variable (e.g. CDSATIS or a characteristic variable). If the F-test was significant ($\alpha = .05$), a t-test was performed to determine if the mean value of the dependent variable was significantly different between the groups of collateral duties. The t-tests were also conducted at a significant level of $\alpha = .05$ (i.e. 95 percent confident that something other than random error accounted for the differences between mean values).

To determine the relative influence and importance of the various characteristics on collateral duty satisfaction, multiple-regression models were analyzed. Variables associated with these characteristics were also compared to collateral duty satisfaction using correlation analysis. Finally, written comments from the survey respondents were examined.

Having stated the background assumptions and the various models and methods used in the analysis, the next chapter will discuss and analyze the results of this research.

IV. RESULTS AND DISCUSSION

This chapter analyzes the data which will answer the study's five fundamental research questions. These questions are:

1. Is collateral duty satisfaction related to career satisfaction and retention?
2. Which are the most and least satisfying collateral duties?
3. Are job characteristics related to collateral duty satisfaction?
4. Are management characteristics related to collateral duty satisfaction?
5. Are individual characteristics related to collateral duty satisfaction?

After answering these questions, the differences between collateral duties will be analyzed using these characteristics to determine strong and weak areas of various duties.

Table IV provides a summary of the demographic characteristics of the sample responding to the survey. The modal responses (most common) for age, rank, source, and aircraft qualification were 31-35 years old, Lieutenant, direct commissioned aviator, and Aircraft Commander (pilot) or Combat Information Center Officer (flight officer).

A. RELATION BETWEEN COLLATERAL DUTY AND CAREER SATISFACTION

The first part of the first research question asks if there is a relationship between collateral duty satisfaction and career satisfaction, and was asked directly in survey

TABLE IV POPULATION DEMOGRAPHIC INFORMATION

AGE	%	*RANK*	%	*SOURCE*	%	*QUAL*	%
21-25	1.5	ENS	2.8	Academy	29.6	CP	16.9
26-30	33.7	LTJG	34.6	AVCAD	0.0	FP	14.7
31-35	35.9	LT	44.2	DCA	41.5	AC/CICO	42.5
36-39	18.2	LCDR	16.0	OCS(E)	10.1	Inst	11.0
> 40	10.7	CDR	2.4	OCS	18.8	FE	14.9

question 12. The mean score for the population is 3.85, which indicates an influence closer to "fairly strong" than "moderate."

The correlation r-values between collateral duty satisfaction (CDSATIS) and career satisfaction is .42, which is significant ($\alpha = .0001$). Compared with the results of the survey question, the r value of .42 represents a fairly strong, though not perfect, correlation. A proposed explanation is that collateral duties are only part of an aviator's work experiences. As Hasselbalch (1990) determined, there are many facets of the overall work experience which contribute to career satisfaction in Coast Guard officers. It is reasonable to expect that the more an individual is satisfied with his or her collateral duties, the more likely he or she be satisfied with a Coast Guard career. Thus, this correlation implies the more aviators are satisfied with their collateral duties, the more likely they are to have a satisfying career.

B. RELATION BETWEEN COLLATERAL DUTY SATISFACTION AND RETENTION

The second part of the first research question asks if there is a relation between collateral duty satisfaction and retention. The r-value of this correlation is .23, and is also significant ($\alpha = .0001$). The lower correlation between collateral duty satisfaction and retention was expected because there are additional external factors, such as job market opportunities, that influence retention. Although there is no data available about Coast Guard aviators resigning prior to retirement, anecdotal evidence gathered from discussion with several aviators has indicated that collateral duty satisfaction is not a primary factor in a retention decision, but is usually a secondary or tertiary consideration. However, in the comments section of the survey, two aviators clearly stated they would resign their commissions because they were extremely dissatisfied with their collateral duties. These comments and the very high significance level and positive value of this correlation coefficient indicate that the more an aviator is satisfied with his or her collateral duties, the more likely he or she intends to stay in the service.

Based on the direct survey question about collateral duty and career satisfaction, correlation coefficients, and qualitative comments, it is clear there is a fairly strong positive relationship between collateral duty satisfaction and career satisfaction, and a positive, but a less strong, relationship with retention intentions.

Having established these relationships and the relative importance of collateral duty satisfaction, the next research question will be analyzed.

C. THE MOST AND LEAST SATISFYING COLLATERAL DUTIES

To determine which collateral duties are the most and least satisfying, collateral duties were identified and grouped using the three different methods discussed in the previous chapter. The mean score of collateral duty satisfaction for each group was analyzed using ANOVA F-tests and t-tests ($\alpha = .05$) to determine statistically significant differences between collateral duties.

1. Collateral duties grouped by department

Table V contains the mean scores of collateral duty satisfaction (CDSATIS) for each department. The Engineering department has the highest reported collateral duty satisfaction. The relatively high mean CDSATIS score for the Engineering department (4.69 with a 5.0 maximum) shows that most officers in Engineering are closer to being "satisfied" with their collateral duties than "slightly satisfied." The mean scores of collateral duty satisfaction in all departments are above a value of 3.0 (a "neutral" rating of collateral duty satisfaction). Thus, even the Administration department, which has the lowest reported mean level of collateral duty satisfaction, has a level of satisfaction greater than "neutral."

Table VI lists the significant differences in CDSATIS between departments. The Engineering department reported a significantly higher mean CDSATIS score than all other departments. This indicates that the Engineering department provides the most satisfying collateral duties of any other air station department. The Administration department was significantly lower than three other departments, but was not significantly different from the Safety and Supply departments.

TABLE V RANKINGS OF CDSATIS BY DEPARTMENT

Department	*CDSATIS Mean*	*CDSATIS Std Dev*	*N*
Engineering	4.691	0.60	60
Public Works	3.802	1.16	43
Safety	3.706	1.26	29
Operations	3.567	1.24	165
Supply	3.357	1.50	28
Administration	3.242	1.26	105

TABLE VI SIGNIFICANT DIFFERENCES IN CDSATIS BETWEEN DEPARTMENTS

Department 1	*is significantly more satisfying than*	*Department 2*
Engineering		PW
Engineering		Safety
Engineering		Operations
Engineering		Supply
Engineering		Admin
PW		Admin
Operations		Admin

The second method of classifying collateral duties defines collateral duties more specifically than just by department and provides further insight into which collateral duties are the most and least satisfying.

2. Collateral duties grouped by department and level

Twenty one collateral duty groups were identified by department and level. Because not all air stations have all the levels in all of their departments, and in order to maintain sufficient sample size in each category, some levels have been combined. For example, data from an aviator assigned as a division officer in the Public Works department were combined with data from all those who reported they were either a division, assistant division, or other assigned officer in Public Works. In this example, these duties were combined into a collateral duty labeled "Public Works - Other."

Table VII lists the mean collateral duty satisfaction scores and number of observations in each of these 21 collateral duties. The scale on the survey ranged from 1 (dissatisfying) to 5 (satisfying), and a score of 3 was described as "neutral." Nineteen of these 21 collateral duty groups had mean values above 3.0, indicating more than neutral satisfaction. The lowest mean value was 2.67, which is still more of a "neutral" response than a "slightly dissatisfied" (score = 2) response. Taken in this context, there are only two collateral duties (Assistant Administration and Supply-Other) which are perceived as being even slightly dissatisfying.

Again, the duties within the Engineering department have the highest reported levels of satisfaction. These four Engineering collateral duties are significantly higher in reported mean satisfaction than every other listed collateral duty except for two (Assistant Operations and Safety-Other). Also, there are no significant differences in collateral duty satisfaction between levels within the Engineering department, which indicate that the factors causing this high satisfaction permeate the department.

On the other hand, the Administration, Operations, and Supply departments have differences in collateral duty satisfaction within their levels. The Assistant Administration Officer tends to be less satisfied than his or her department head and division officers. The Assistant Operations Officer is significantly more satisfied with his or her collateral duty than the "other" assigned officers in Operations. While the Supply department head has a "slightly satisfying" collateral duty, the "other" assigned officers

TABLE VII RANKINGS OF COLLATERAL DUTIES BY DEPARTMENT AND LEVEL

Collateral Duty	*Mean CDSATIS (Std Dev)*	*N*	*Collateral Duty*	*Mean CDSATIS (Std Dev)*	*N*
Engineering			*Administration*		
- Officer	4.81 (0.49)	18	- Officer	3.70 (0.99)	25
- Assistant	4.62 (0.71)	13	- Assistant	2.80 (1.13)	22
- Division	4.65 (0.66)	23	- Division	3.73 (1.19)	11
- Other	4.67 (0.52)	6	- Other	3.10 (1.37)	47
Operations			*Public Works*		
- Assistant	4.15 (0.97)	23	- Officer	3.94 (1.06)	17
- Division	3.51 (1.26)	42	- Assistant	3.33 (1.23)	12
- Asst. Div.	3.52 (1.11)	27	- Other	3.96 (1.20)	13
- Other	3.43 (1.32)	72			
Safety			*Supply*		
- Officer	3.77 (1.36)	15	- Officer	3.69 (1.45)	13
- Assistant	3.62 (1.13)	6	- Assistant	3.33 (1.50)	9
- Other	3.86 (1.21)	7	- Other	2.67 (1.63)	6

are significantly lower with a rating of less than neutral collateral duty satisfaction. All other differences, both within and between groups, are not significant.

This method of grouping is very helpful in examining fairly broad categories of collateral duties, but it does not identify the specific collateral duties of the division officers and their subordinates. The last method of grouping attempts to obtain this specific information.

3. Collateral duties grouped by specific job

The information presented in Table VIII ranks, by relative satisfaction, the collateral duties which were specifically identified by the survey respondents. Some collateral duties, such as Special Services and Legal Affairs, are not included because they were either not specifically identified by respondents or only two or less responses were made for that duty. Table IX lists the specific collateral duties which had significantly different means for collateral duty satisfaction from each other. The sample size of each specific collateral duty is small, so caution should be used in statistical inference.

TABLE VIII RANKING OF SPECIFIC COLLATERAL DUTIES

Collateral Duty	*CDSATIS Mean*	*CDSATIS Std Dev*	*N*
Schedules	4.50	0.50	5
Training	4.10	0.45	5
MIS	4.00	1.08	4
PAO	3.90	0.82	5
Morale	3.83	1.04	3
Law Enf	3.58	0.97	6
Flt Svc	3.50	1.49	8
Personnel	3.00	1.00	6
Stan	3.00	1.68	4
ESO	2.71	1.47	7
CMS	2.17	1.47	6

With this caution in mind, it appears that the most satisfying specified collateral duty is the Schedules Officer, as it is significantly more satisfying than three other specified duties (Personnel, Educational Services Officer (ESO), and the Communications Security Material System (CMS) custodian). At the other extreme is the

TABLE IX SIGNIFICANT DIFFERENCES IN CDSATIS BETWEEN SPECIFIC COLLATERAL DUTIES

Collateral Duty 1	*is significantly more satisfying than*	*Collateral Duty 2*
Schedules		Personnel
Schedules		ESO
Schedules		CMS
Training		CMS
MIS		CMS
PAO		CMS
Law Enf		CMS
Flt Svc		CMS

CMS custodian duty, which is significantly less satisfying than six other duties. Even though the sample size is small, the mean score of 2.17 from the six respondents indicate that the CMS duty is the only collateral duty which is "slightly dissatisfying." The ESO duty also reported a mean value less than 3.0 (neutral satisfaction), and five of the seven scores for collateral duty satisfaction are less than 2.5.

4. Summary of collateral duty satisfaction rankings

Using the three methods of identifying collateral duties, the most and least satisfying collateral duties have been determined, and are listed in Tables V, VIII, and IX. By far, the Engineering department provides the most satisfying collateral duties. The lowest mean satisfaction scores were from the Administration department, but all departments reported above "neutral" satisfaction. Four collateral duties reported mean scores less than "neutral" satisfaction (Assistant Administration, Supply-Other, ESO, and CMS custodian).

The analysis of this question has shown that there are differences in collateral duty satisfaction among the various duties. The final three research questions examine the job, management, and individual characteristics which may influence job satisfaction.

D. JOB CHARACTERISTICS AND COLLATERAL DUTY SATISFACTION

The third research question asks if there is a relation between job characteristics and collateral duty satisfaction. One model to explain these differences is Hackman and Oldham's Job Characteristics model, so part of the analysis will determine if this theory explains the differences noted between various departments. The more specific job characteristics developed for this study will also be analyzed. This analysis uses correlation, multiple regression models, and a review of the qualitative comments made by respondents.

1. Job Characteristic Correlations

Table X lists the correlation coefficients between collateral duty satisfaction and the variables used to measure job characteristics. All job characteristics are positively related to collateral duty satisfaction and are significant to $\alpha = .0001$.

TABLE X CDSATIS CORRELATIONS WITH JOB CHARACTERISTICS

* *VARIETY*	.55	* *JFEEDBAK*	.50	*PRO_OFF*	.50
* *TASKID*	.45	*AFEEDBAK*	.40	*PRO_AV*	.41
* *TASKSIG*	.51	*DEALOTH*	.37	*OFFKSA*	.24
* *AUTONOMY*	.58	*LEAD*	.54	*AVKSA*	.28

* denotes core job characteristic from Hackman and Oldham

Hackman and Oldham's five core job characteristics (variety, task identity (TASKID), task significance (TASKSIG), autonomy, and feedback from the job (JFEEDBAK)) have relatively high r values. The two additional diagnostic job characteristics developed by Hackman and Oldham (feedback from agents (AFEEDBAK) and dealing with others (DEALOTH)) have lower, but still moderately strong positive correlations. The characteristics developed specifically for this research (leadership opportunities (LEAD), professional development as an aviator (PRO_AV) and/or officer (PRO_OFF), and the aviator (AVKSA) and/or officer (OFFKSA) knowledge, skills, and abilities required had mixed results. The strongest correlations of with collateral duty satisfaction are leadership opportunities (r = .54) and PRO_OFF (r = .50). While still showing a significant relationship, the lowest correlations were from the officer and aviator knowledge skills and abilities required (r = .28 and .24 respectively).

These correlations support the job characteristics theory. The correlation coefficients not only suggest that increases in all of these job characteristics should increase collateral duty satisfaction, but the differences in r values imply that some job characteristics may be more influential than others.

2. The most influential job characteristics

Using a multiple regression model with all 12 job characteristic variables resulted in a model which explained about 56 percent of the variance in collateral duty satisfaction. However, many of the variables in this model are related, which causes severe multicollinearity (a statistical problem). To reduce this problem, some variables were deleted. A regression of the five core job characteristics of the Hackman-Oldham model explained over 49 percent of the variance in collateral duty satisfaction scores. This indicates that this model does a fairly good job of explaining the differences in the reported collateral duty satisfaction.

A regression using the three most influential of all 12 characteristics explained 48 percent of the collateral duty satisfaction variance. These three characteristics are autonomy ($\beta = .50$), task significance ($\beta = .31$), and leadership ($\beta = .27$). These job characteristics are thus determined to have the most influence on collateral duty satisfaction.

3. Job characteristic mean scores

Table XI summarizes the mean scores of each of the job characteristics from the survey respondents. Overall, the scores for the most influential characteristics (AUTONOMY, TASKSIG, and LEAD) are somewhat high, with task significance scoring second highest. The scores which are below a 3.0 indicate that collateral duties tend not to provide opportunities for professional growth as an aviator, and do not require the skills of either an officer or an aviator.

TABLE XI MEAN SCORES OF JOB CHARACTERISTICS

VARIETY	3.60 (1.06)	*JFEEDBAK*	3.42 (0.99)	*PRO_OFF*	3.88 (1.20)
TASKID	3.63 (1.02)	*AFEEDBAK*	3.12 (1.02)	*PRO_AV*	2.57 (1.62)
TASKSIG	4.15 (0.90)	*DEALOTH*	4.32 (0.81)	*OFFKSA*	2.19 (1.53)
AUTONOMY	3.83 (0.94)	*LEAD*	3.49 (1.33)	*AVKSA*	1.96 (1.52)

(Numbers in parenthesis indicate standard deviation)

4. Aviator comments regarding job characteristics

Of the written comments made by 109 officers, at least 30 were concerned with job characteristics. Of the twelve officers who remarked they were more than satisfied with their collateral duty, nine were from the Engineering department.

Fifteen of the comments specifically mention dissatisfaction with task significance and variety. As one officer wrote, "updating and changing DoD and NOAA publications for 18 months is not very challenging." Nine officers describe their collateral duty as "busy work", "trivial", or "bogus." Four officers mention that although they feel their job was significant, they think the overall perception among junior officers is that collateral duties are insignificant. Three other officers mention that while their collateral duty is important, they are dissatisfied with the additional "pet projects" they are tasked to complete. Five comments express dissatisfaction with the leadership opportunities or a lack of responsibility. One officer remarked that in eight years as a Coast Guard officer, he has never supervised anyone.

Overall, the qualitative comments reflect and support the statistical determinations of the great importance and influence of job characteristics on collateral duty satisfaction. The survey data reveal that most officers feel their duty is significant, but the comments suggest some officers do not feel the collateral duties of other officers are significant. Also most aviators feel their duties do not require the knowledge, skills, and abilities of a Coast Guard officer or aviator to complete. There were comments made regarding the lack of autonomy, but most of these comments were directed more towards the "micro-management" of supervisors, and not the autonomy provided by the job itself. The issue of "micro-management" will be discussed in the next section.

E. MANAGEMENT CHARACTERISTICS AND SATISFACTION

The fourth research question asks if there is a relation between collateral duty management and satisfaction. In other words, what management techniques are associated with increased collateral duty satisfaction? This question is answered using correlations, regression analysis, and a review of the pertinent comments made by aviators.

1. Management characteristic correlations

The six management characteristics measured were satisfaction with coworkers (COWORK), satisfaction with supervisor (SUPER), the ability of an individual to influence their assignment to a collateral duty (CDASSIGN), how long the collateral duty has been performed (CDTIME), the number of collateral duties assigned (NO_CD), and whether the Officer Evaluation Report (OER) adequately balances aviation and collateral duties (OERBAL).

While all the correlations with collateral duty satisfaction are significant, the strongest positive relationships ($\alpha = .0001$) are those between satisfaction with coworker ($r = .51$), the ability to influence assignment ($r = .48$), and satisfaction with supervisor ($r = .47$). These suggest that satisfaction increases as an individual is satisfied by their coworkers, is able to choose their own collateral duty, and is satisfied with his or her supervisor.

The three other characteristics have a less strong relation, with two of those three being negative. These correlations suggest that individuals generally become more satisfied as their OERs emphasize their aviation duty (OERBAL $r = .23$), the number of collateral duties assigned decreases (NO_CD $r = -.21$), and if they have not been assigned the duty very long (CDTIME $r = -.10$). However, the very low correlation coefficient of CDTIME and the reduced significance ($\alpha = .03$) imply that how long a collateral duty has been held is not a major influence on collateral duty satisfaction.

2. Most influential management characteristics

A multiple regression model of the six management characteristic variables explained 45 percent of the variance in collateral duty satisfaction. Of the six variables, only OERBAL was not a significant factor in predicting collateral duty satisfaction.

Another multiple regression model using only the three most influential characteristics explained 42 percent of the variation, and reduced the adverse effects of multicollinearity of the first model. These three management characteristics are an individual's satisfaction with their coworkers ($\beta = .53$), the ability to influence their assignment to a duty ($\beta = .32$), and satisfaction with their supervisor ($\beta = .28$).

The explanatory power of these models is fairly high, which indicates that how a collateral duty is administered and managed is a major factor in satisfaction. A review of the mean scores reported by the respondents will show how much of these influential characteristics are actually present in collateral duties overall.

3. Management characteristics mean scores

Table XII provides a summary of the mean reported scores for the six management characteristics. Two of the most influential characteristics have relatively high scores (COWORK and SUPER), but the ability to influence collateral duty assignment (CDASSIGN) is just slightly above a moderate level (3.0). The score for OERBAL indicates that most officers believe somewhat too much emphasis is placed on collateral duties in their evaluations. The scores of CDTIME and NO_CD indicate that the "average" aviator has been assigned his or her collateral duty between six months and one year, and also has between two and three other collateral duties to perform at the same time.

TABLE XII MEAN SCORES OF MANAGEMENT CHARACTERISTICS

COWORK	4.12 (0.72)	*CDASSIGN*	3.17 (1.23)	*NO_CD*	2.53 (1.36)
SUPER	3.76 (1.01)	*CDTIME*	3.17 (1.25)	*OERBAL*	1.97 (0.82)

(Numbers in parenthesis indicate standard deviation)

4. Aviator comments about management

Over 95 of the 109 written comments mentioned an aspect of the management of collateral duties. This clear majority of the written comments indicates that management of collateral duties is important to aviators. However, no comments were made regarding satisfaction with coworkers, and only two comments specifically mentioned dissatisfaction with the way collateral duties were assigned.

Fourteen comments are made regarding supervisors, and only two of them are complimentary. Four officers remark that they perceive the distribution of collateral duties is unbalanced. In other words, they feel they are overloaded, and see other officers not working as hard as they are. Three officers complain of the "micro-management" of a supervisor. This is interpreted to mean the supervisor is highly directive, and does not allow these officers the autonomy to complete their jobs. Two comments express dismay at a lack of supervisor support.

The most popular comment, with over 40 responses, concerns the time management conflict between collateral duties and flying. These comments incorporate having too many collateral duties and having to settle for "good enough" (satisficing) performance instead of optimizing performance. These comments indicate that collateral duties themselves are not necessarily dissatisfying, but not having enough time to become proficient in them, complete them all, and still remain proficient in flying is very dissatisfying. Six officers mention flight safety is being degraded, five officers state they are "burned out", and two state they will resign their commission because of this conflict.

The outcry of excessive collateral duties is very strong from those aviators assigned to combined Group-Air Stations. The typical comment is paraphrased as "I thought I had too many collateral duties at my previous air station, but that was nothing compared to the sheer overload here." The survey was not designed to differentiate between combined Group-Air Stations and other air stations, yet this distinction was made clear by the comments of the aviators.

The next largest group of comments, made by at least 27 officers, concerns the staffing of air stations. The general trend of these comments acknowledges that collateral duties are necessary, but aviators should not necessarily perform all of them. Suggestions are made to increase air station staffing of support personnel (both enlisted and officer) so that aviators are relieved of some collateral duties, thus reducing the staffing requirements for aviators. The Limited Duty Officer (LDO) program for aviators is also suggested so that those officers who only want to fly and have aviation related collateral duties could do so.

Twenty-one comments are made that a perceived reversal of priorities has occurred in regards to collateral and primary duties. The perception is that the primary duty of aviators, i.e. accomplishing the missions of Coast Guard aviation, is less important than jobs created to support the accomplishment of those missions (collateral duties). One officer quotes a line from an air station instruction which states "Flying, leave, and TAD (Temporary Additional Duty) interfere with normal duties and will not be considered as excuses for ...."

Twelve aviators write that they are dissatisfied by the imbalance between collateral and primary duties on their OERs. The mean score of the variable which measured OER balance (OERBAL) is 1.97, which indicates collateral duties are stressed "somewhat too much." The distribution of responses to survey question 11 (Appendix B) clearly indicates that aviators in general perceive they are evaluated much more on collateral duty performance than flying performance.

Five first tour aviators express dissatisfaction because they spend too much time on collateral duties and not enough on learning the intricacies of Coast Guard aviation. Two Lieutenant Commanders remark that they feel they may have sacrificed their competitiveness for promotion by only having performed aviation-related collateral duties throughout their Coast Guard careers, but still they are glad they never worked in a collateral duty that did not specifically involve aviation.

Seven comments express concern over a lack of training and proper skills to accomplish the job. Two of these comments specifically address hazardous waste procedures.

These qualitative comments support the statistical results of this study and indicate management characteristics have an important influence on job satisfaction. However, these comments also suggest that collateral duty satisfaction may be less important than simply having the time to become proficient in both flying and collateral duties.

F. INDIVIDUAL CHARACTERISTICS AND SATISFACTION

The last research question asks if there a relation between individual characteristics and collateral duty satisfaction. In other words, is it possible to identify certain individual traits or characteristics that will help ensure that a person will be satisfied with a collateral duty? The analysis techniques previously used will answer these questions.

1. Individual characteristic correlations

A correlation analysis of the four of the five individual characteristics (rank, age, pilot/flight officer qualification (QUAL), and how an officer views himself or herself as an officer or aviator (OFF_AV)) indicated only one significant relationship between these variables and collateral duty satisfaction. The aviator qualification had the highest r value (.17), which suggests that higher qualified aviators tend to have higher collateral duty satisfaction. Correlations for commissioning source were not analyzed because the scores are not ordinal numbers. The low r values of these correlations indicate these are not strong relationships and further analysis of these characteristics would be meaningless.

However, the perception of how an officer views himself or herself as an officer or aviator may be important in assigning collateral duties. It seems plausible that those who consider themselves mostly as aviators would prefer to have aviation-related collateral duties, and those who view themselves primarily as officers would do better in the more administrative collateral duties. An analysis of the data in this regard goes beyond the scope of this research, but is an area of interest and further research.

Having established the importance of job and management characteristics on collateral duty satisfaction, the next section will determine which specific characteristics are the most influential on collateral duty satisfaction.

G. MOST INFLUENTIAL CHARACTERISTICS ON SATISFACTION

A regression model was run using the top three job and management characteristics. The results of this model explained 56 percent of the variation of collateral duty satisfaction, but had moderately high multicollinearity. A regression of the five most influential of these characteristics explained 55 percent of the variation, and reduced the multicollinearity to a moderate level. These five characteristics are autonomy (β = .38), task significance (β = .22), being able to influence the collateral duty assignment (β = .22), leadership opportunities (β = .21), and satisfaction with the supervisor (β = .20). Of all the job and management characteristics studied, these are the factors with the most influence on collateral duty satisfaction for Coast Guard aviators as a whole. Autonomy is by far the most influential on collateral duty satisfaction, being almost twice as strong as any other characteristic.

However, these influences may change as officers progress throughout their careers. For example, autonomy is the most influential characteristic when all respondents are analyzed together. But is it the most important for all groups of aviators? Although individual characteristics were determined not to be influential on collateral duty satisfaction as a whole, there may be differences in groups. Because rank is a common grouping of officers, the following section determines the most influential characteristics by rank.

1. Most influential characteristics by rank

A series of regression models was analyzed, which grouped officers into three ranks - Lieutenant (junior grade) (LTJG), Lieutenant (LT), and Lieutenant Commander (LCDR). There were only 13 Ensign (ENS) and 11 Commander (CDR) responses to the survey question concerning rank. The responses from the 13 Ensigns were combined with the LTJG scores, but a model for the 11 Commanders was not performed. Each model only examines the three most influential characteristics out of all the job and management characteristics which are identified. The effects of multicollinearity are slight in each of the models, and all of the characteristics in the models are significant ($\alpha = .003$). The results of these models are listed in Table XIII.

The model for ENS and LTJG explains 40 percent of the variance in collateral duty satisfaction scores. The most influential characteristics for these officers are autonomy ($\beta = .36$), task identity ($\beta = .34$), and variety ($\beta = .32$).

A similar model for Lieutenants explains 64 percent of the collateral duty variance. The most influential characteristics are autonomy ($\beta = .47$), leadership opportunities ($\beta = .40$), and opportunities for professional development as an aviator (PRO_AV) ($\beta = .21$). The influence of both autonomy and leadership on collateral duty satisfaction is about twice as strong as that for PRO_AV.

TABLE XIII MOST INFLUENTIAL CHARACTERISTICS BY RANK

ENS/LTJG	*LT*	*LCDR*
AUTONOMY	*AUTONOMY*	*AUTONOMY*
TASKID	*LEAD*	*CDASSIGN*
VARIETY	*PRO_AV*	*CDTIME*

A model for Lieutenant Commanders explains 53 percent of the variance in collateral duty satisfaction, and the most influential characteristics are autonomy ($\beta = .74$), the ability to influence collateral duty assignment ($\beta = .29$), and the time spent in collateral duties (CDTIME) ($\beta = -.23$). The negative coefficient for CDTIME means collateral duties tend to be dissatisfying for these officers as time progresses.

The most influential trait on collateral duty satisfaction for all ranks is autonomy, which confirms the previously described importance of autonomy. The second most influential characteristic for the entire sample is task significance, but it is not in the top three of any rank group. The moderate effects of multicollinearity in the general model may have caused this result, i.e. the variance of different characteristics noted in each rank group tend to cancel out when combined together and a related variable (task significance) emerges as a major influence.

Having established that the influences of various characteristics vary with rank, the next section not only examines how the influential characteristics vary among departments, levels, and specific collateral duties, but also explains the variations in collateral duty satisfaction. Appendix D provides tables of the mean scores and standard deviations of all job, management, and individual characteristics by department and rank. These may be of interest to supervisors at air stations, as relatively weak and strong areas of these characteristics are identified by these groupings.

H. COMPARISON OF CHARACTERISTICS BY DEPARTMENT

Table XIV compares the mean scores of collateral duty satisfaction (CDSATIS) and the five most influential characteristics with the departments and the total mean scores of the sample. Most officers in all departments are Lieutenants or below, thus the influential characteristics for these officer ranks will also be examined. The significant differences between departments in all characteristics examined are listed in Appendix D.

The Engineering department has the highest mean scores for each of these influential characteristics, and has significantly ($\alpha = .05$) greater mean scores for all characteristics (except satisfaction with the supervisor) than the Administration, Operations, Public Works, and Supply departments. However, the Engineering scores for autonomy, task significance (TASKSIG), satisfaction with supervisor (SUPER), and ability to influence collateral duty assignment (CDASSIGN) are not significantly different from Safety. The Engineering department also provides significantly more task identity, variety, and development as a professional aviator (characteristics which influence Lieutenants and below) than most of the other departments. These characteristics clearly indicate why the Engineering department has the highest overall collateral duty satisfaction.

TABLE XIV MEAN RATINGS OF CHARACTERISTICS BY DEPARTMENT

	All	Admin	Eng	Ops	PW	Safety	Supply
N	457	107	61	165	43	29	28
CDSATIS	3.67	3.24	4.69	3.57	3.80	3.71	3.36
AUTONOMY	3.83	3.73	4.38	3.56	3.98	4.20	3.68
TASKSIG	4.15	3.98	4.70	4.04	4.16	4.34	3.80
CDASSIGN	3.13	2.91	4.02	3.15	2.93	3.66	2.36
LEAD	3.49	3.20	4.75	3.08	4.19	3.33	3.46
SUPER	3.76	3.70	3.93	3.75	3.82	3.82	3.46

The Safety department ranks third in collateral duty satisfaction, and scores above average in all characteristics except leadership. The opportunity for professional development as an aviator, an influential characteristics for Lieutenants and below, is significantly higher in Safety than all departments except Engineering. The Safety department's variety scores are also significantly higher than three other departments (Administration, Operations, and Supply).

Operations ranked fourth, and was below average for all characteristics except task significance. The autonomy and variety scores are significantly less than three other departments (Engineering, Public Works, and Safety), but the professional development as an aviator score is higher than Public Works, Supply, and Administration.

Public Works, Supply, and Administration are the departments in which individuals have less influence in their assignment (CDASSIGN, i.e. they are directed rather than volunteer for the collateral duty). Of the five most influential characteristics, the ability to influence collateral duty assignment is the only characteristic which has scores of less than 3.0 (which indicates less than "neutral" satisfaction). One trait these three departments share is that they are considered to be support departments, and are not directly involved in flight operations. The relatively low opportunities for professional development as an aviator in these departments and the relatively high value of this characteristic to Lieutenants may explain why these officers tend not to volunteer for these departments.

The collateral duty satisfaction scores in the Public Works department were higher than any other department, except Engineering. These scores indicate that although officers tend not to volunteer to this duty, once they are assigned, the officers find the Public Works duties quite satisfying, and enjoy above average autonomy, task significance, leadership opportunities, and satisfaction with supervisors. These characteristics result in increased collateral duty satisfaction.

The Supply department has significantly lower CDASSIGN scores than all other departments, and ranks last in task significance. The variety score is significantly lower than three other departments, however the low scores in professional development as an aviator may be partially offset by the leadership opportunities, which rank third overall.

The Administration department has the lowest collateral duty satisfaction scores. It also has the second to lowest means scores of task significance, being able to influence collateral duty assignment, and leadership. The administration department has significantly less variety than three other departments and less professional development as an aviator opportunities than four departments. These characteristics explain the lower collateral duty satisfaction in this department.

The comparison of the most influential characteristics explains the differences between the collateral duty satisfaction scores among the departments, and shows why the Engineering department provides higher levels of satisfaction than other departments. The next section will examine how these characteristics vary within the hierarchy of the chain of command at air stations.

I. COMPARISON OF CHARACTERISTICS BY LEVEL

Table XV compares the mean scores and standard deviations of collateral duty satisfaction and the five influential characteristics for the total sample and for specific levels in the departmental chain of command. The department heads have significantly higher scores in leadership than all other levels, and also report higher autonomy scores than all levels except the assistant department heads. There was no significant difference in the satisfaction with the supervisor between all levels. The bottom of the departmental chain of command, the other assigned officers, reported significantly lower scores in leadership than every level except the assistant division officers. With the exception of satisfaction with supervisor, the "other" assigned officers have significantly less of each of these characteristics than the department heads.

TABLE XV MEAN RATINGS OF CHARACTERISTICS BY LEVEL

	All	*Dept Head*	*Asst Dept*	*Div*	*Asst Div*	*Other*
N	*457*	*99*	*90*	*90*	*35*	*141*
CDSATIS	3.67	3.99	3.65	3.84	3.57	3.38
	(1.25)	(1.10)	(1.25)	(1.24)	(1.17)	(1.32)
AUTONOMY	3.83	4.07	3.75	3.80	3.84	3.71
	(0.94)	(0.87)	(0.88)	(0.89)	(0.98)	(1.02)
TASKSIG	3.63	4.43	4.17	4.09	4.18	3.96
	(1.02)	(0.80)	(0.88)	(0.90)	(0.98)	(0.93)
CDASSIGN	3.18	3.46	2.98	3.31	3.23	2.99
	(1.23)	(1.29)	(1.31)	(1.10)	(1.11)	(1.22)
LEAD	3.49	4.38	3.70	3.89	2.79	2.66
	(1.33)	(0.92)	(1.07)	(1.16)	(1.29)	(1.29)
SUPER	3.76	3.86	3.76	3.82	3.94	3.61
	(1.01)	(1.04)	(1.03)	(0.96)	(0.83)	(1.04)

(Numbers in parenthesis indicate standard deviation)

While collateral duty satisfaction (CDSATIS) tends to decrease with level, the only characteristic which constantly decreases with level is leadership opportunities (LEAD). These scores decrease such that both the assistant division officers and other assigned officers are "slightly dissatisfied" with their leadership opportunities. From the tables in Appendix C, the significant correlation coefficient of -.49 between leadership opportunities (LEAD) and level in the chain of command (LEVEL) strongly supports this (a score of 1 in LEVEL indicates a higher level than a score of 5, and a score of 1 in LEAD is less satisfying than a score of 5, hence the negative coefficient).

The influence of leadership opportunities is the second most influential characteristic for Lieutenants and the third most influential for Assistant Division officers. The power of this influence can be seen by examining its effect on collateral duty satisfaction (CDSATIS) at the Assistant Division level. This level reports the highest scores of satisfaction with supervisors (SUPER), and the second highest scores of autonomy, task significance (TASKSIG), and ability to influence collateral duty assignment (CDASSIGN). Yet this level scored the second lowest CDSATIS score, and the second lowest LEAD score. Clearly, leadership opportunities are very important to these officers.

J. COMPARISON OF CHARACTERISTICS BY SPECIFIC DUTIES

Earlier in this chapter, the duty of Schedules Officer and CMS custodian were found to be the most and least satisfying of the collateral duties specifically mentioned by name by the survey respondents. This section will compare the job characteristics of these duties, and explain the differences between these extremes. The mean rank of the five schedules officers (3.0) tended to be slightly higher than the six CMS custodians (2.5), so the general characteristics influencing all officers will be supplemented with the influential characteristics for LTJGs and LTs.

The CMS custodian scores below a 3.0 (neutral satisfaction) in autonomy, being able to influence collateral duty assignment, variety, and professional development as an aviator. The nature of the job is to manage classified material which explains the high task significance reported (4.0). However, the extremely tight controls imposed by regulations do not provide any autonomy in the job. In terms of job design theory, this is a very "mechanistic" collateral duty. The CMS custodian gets no credit if everything runs well because everything is directed and specified, but if some material is lost or missing, the custodian is the first person assumed to be at fault. These characteristics explain the very low job satisfaction.

Contrasting this is the Schedules officers. The mean score for autonomy is 4.53, which indicates these officers enjoy a relatively large amount of freedom in determining how to perform the duty. The task significance, ability to influence collateral duty assignment, satisfaction with the supervisor, and task identity also score above a 4.5, which indicates large amounts of these characteristics. The nature of the job, scheduling all aviators (including command and control officers) for flights, makes this duty very visible and challenging, and so very desirable. However, leadership opportunities are below average, scoring 2.6. The low score in leadership is offset by the increased autonomy and other characteristics, resulting in a mean collateral duty satisfaction score of 4.5 (satisfied).

K. SUMMARY OF ANALYSIS

Throughout this analysis and discussion, it is clear that collateral duty satisfaction is positively related to career satisfaction and retention. Collateral duties were identified using three methods, and their relative rankings of collateral duty satisfaction were determined. The job and management characteristics are very influential in determining collateral duty satisfaction, and five characteristics (autonomy, task significance, the ability to influence collateral duty assignment, leadership opportunities, and satisfaction with the supervisor) have been identified which have the greatest influence on collateral duty satisfaction on Coast Guard aviators as a whole. The sample was grouped by rank and other characteristics emerged as being influential (variety, task identity, professional development as an aviator, and how long a collateral duty is assigned). All these characteristics help explain why collateral duty satisfaction varies among different departments, levels, and specific duties.

Now that some explanations for differences in collateral duty satisfaction have been examined, the next chapter will draw conclusions and suggest recommendations for improvement and areas for further research.

V. CONCLUSIONS AND RECOMMENDATIONS

The first research question asks if collateral duty satisfaction is related to career satisfaction and retention. The results of this research clearly show that collateral duty satisfaction is moderately to strongly related to career satisfaction, and less strongly, though still significantly, related to the retention plans of aviators.

The second question seeks to determine the most and least satisfying collateral duties at air stations. Three methods were used to identify collateral duties. The results show that most collateral duties provide some degree of positive satisfaction. As a whole, the Engineering department provides the most satisfying collateral duties. Only four specific collateral duties were identified which provided on average less than "neutral" satisfaction: Administration Assistant, "other" assigned officers in the Supply department, the Educational Services Officer, and the Communications Security Material System (CMS) custodian.

The third research question inquires if job characteristics, i.e. those characteristics designed into a collateral duty, are related to collateral duty satisfaction. The results show they are very influential and help explain the differences in satisfaction among the various collateral duties. The most influential job characteristics are autonomy, task significance, and leadership opportunities, which result in increased collateral duty satisfaction when these characteristics are present.

The relation between collateral duty satisfaction and management characteristics was the subject of the fourth research question. The results indicate these are also very influential on collateral duty satisfaction, with an individual's satisfaction with coworkers, the ability to influence collateral duty assignment, and satisfaction with the supervisor being the most influential management characteristics.

The vast majority of comments made by aviators concerned management characteristics. Over 40 aviators identified the time management conflict between collateral and primary duties as a source of dissatisfaction. Most officers described their collateral duty as significant, but reported that too much emphasis is placed on collateral duties in their evaluations (OERs). This overemphasis contributes to a perception among some officers that collateral duties are more important than primary duties.

The relation between individual characteristics and collateral duty satisfaction was examined. Although no significant relations could be determined, this relation is a rich source for further research.

Of all the job and management characteristics examined, the following were determined to be the most influential characteristics on collateral duty satisfaction for aviators in general:

1. Autonomy.
2. Task significance.
3. Being able to influence their assignment to a collateral duty.
4. Leadership opportunities.
5. Satisfaction with their supervisor.

The influence of various job and management characteristics may change over the course of an officer's career. Recognizing this, the most influential characteristics for each rank of officers are as follows:

1. Ensign and Lieutenant (junior grade):
    a. Autonomy.
    b. Task identity.
    c. Variety.

2. Lieutenant:
    a. Autonomy.
    b. Leadership opportunities.
    c. Professional development as an aviator.

3. Lieutenant Commander:
    a. Autonomy.
    b. Being able to influence their assignment to a collateral duty.
    c. Time assigned in collateral duty (less time is better).

A plausible explanation for these changes is that initially aviators try to perform both aviation and collateral duties with the same vigor. They are not sure of what is involved in Coast Guard aviation, and which direction to head in their aviation careers, so variety and seeing how their collateral duty fits in with the "big picture" is important. However, frustration results because of the time conflict between primary and collateral duties, and the aviators preference to develop aviation skills. Compounding this conflict is the officers' desire for leadership, which tends not to be satisfied in the junior ranks. As officers become more senior, they assume more responsible duties, and the ability to influence their collateral duty assignment becomes stronger because they have generally decided in which direction they want to pursue their career, and want collateral duties which will enhance their decision. The more senior duty-standing aviators tend to be assigned collateral duties longer than junior aviators, and the negative influence of the how long an officer has been assigned their duty may indicate that these duties tend not to be enriched.

A. RECOMMENDATIONS

The following recommendations are based on the conclusions above.

1. Tailor collateral duties to enhance influential characteristics

Supervisors are encouraged to review the influential characteristics listed above and compare these to the characteristics present in the duties which they supervise. Appendix D contains the significant differences in the examined characteristics between the departments, and may assist in identifying generally weak and strong areas. The presence and absence of influential characteristics within the supervisor's power to change may be identified, and weaknesses corrected. More specifically, the collateral duty characteristics of the in the Engineering department (Appendix D) result in very high satisfaction levels, so incorporating these characteristics into other collateral duties is desirable.

Autonomy is the most influential characteristic among all ranks of officers. Ideally, all officers should be given the autonomy to perform their duties as they see best. However, some duties are not designed to enhance autonomy and job redesign may be beyond local control, such as the CMS custodian. In these duties, the lack of autonomy can perhaps be compensated by increasing other influential characteristics, such as leadership.

Duties that are lower in some influential characteristics, such as opportunities for professional development as an aviator, may be enriched by increasing other characteristics. This can increase collateral duty satisfaction, as seen in the analysis of the Public Works department, which compensates a lack of professional development as an aviator with increased autonomy, task significance, and leadership opportunities.

Also, when multiple duties are to be assigned to an individual, supervisors should consider making the duties complimentary in regards to influential characteristics. For example, if an individual is assigned a duty which has low autonomy, an ideal additional duty for that person would be higher in autonomy. Of course, this is but one of a number of factors to consider in job placement.

This research reveals that junior officers want more leadership opportunities than present collateral duties allow. Given the existing staffing at air stations, where possible, more leadership opportunities should be given to these officers.

2. Reduce unnecessary tasks in collateral duties

Supervisors are encouraged to examine the duties they assign, and are assigned, and try to eliminate unnecessary tasks, or tasks that are questionable. While most officers feel their collateral duty is significant, their perception of collateral duty significance significantly affects collateral duty satisfaction.

One simple and proven technique to make large strides in reducing the number of insignificant tasks is to eliminate "administrivia" (the seemingly needless reports, records, and other paperwork which is done). To accomplish this, supervisors ask their subordinates what functions and reports are not essential to the job. They then review the list with the subordinates, and if a supervisor knows why a function is essential, he or she explains that to the subordinate. If the supervisor does not know the why a function is essential, he or she should ask the person who receives the report. If the reason stated is not really essential to supporting the air station, chances are that function can be eliminated. The decision to eliminate a function of a job may not be the supervisor's, but at least the supervisor's supervisor is now aware of inherent inefficiencies which not only waste time and effort but also are dissatisfying. This method is used by the NBC television network, and has eliminated more than 2 million pieces of paper a year (Stewart 1991).

3. Enhance individual choice in collateral duty assignments

The impact of an individual being able to influence collateral duty assignment on satisfaction is very significant. Therefore, supervisors are encouraged to ask their subordinates for input when making assignment decisions. This dialogue may enable a better fit between the individual and the job.

4. Clarify the collateral and primary duty relationship

The relative emphasis given to collateral (support) and primary (flying) duties is best decided at each air station. The time management conflict between collateral and primary duties will exist as long as aviators are assigned both duties, but some policy guidelines or a broad mission statement by commanding officers may be helpful in clarifying the relative importance of these duties for their subordinate officers.

5. Examine staffing levels at air stations

The time management conflict between collateral and primary duties may be a result of inefficient staffing levels at air stations. This research indicates that aviators generally perceive that their collateral duty does not require either a Coast Guard aviator or officer to complete. This research also indicates that most aviators working in the support departments (Administration, Public Works, and Supply) are assigned rather than volunteer for these duties. The duties within these departments should be the first to be examined by a series of job analyses to determine if other personnel, rather than aviators, are better suited to complete these duties.

Both the Navy and Air Force have initiated programs which are designed to let aviators fly more. In some Navy squadrons, officers with an administrative specialty have been assigned to relieve aviators from routine administrative chores. In the Air Force, efforts are being made to eliminate aviators from all duties which are not directly related to flying. (Grossman 1989)

The very clear message from aviators assigned to combined group-air stations is that these units are undermanned for the amount of collateral duties which must be completed to support both the group and air station. Recognizing the increased administrative demands on these units, a separate job analysis for these units is recommended.

The results of these analyses can be used to revise staffing. If other personnel are better suited for the support duties at air stations, the expense of obtaining these additional personnel may be somewhat offset by a reduction in the number of aviators (who will fly more often than current aviators). An increase in support personnel would also provide more leadership opportunities and so enrich the collateral duties of aviators. However, the need for changing the staffing levels can be determined only after a thorough job analysis is completed.

B. AREAS FOR FURTHER RESEARCH

This research has touched upon many areas for further research. The following is are suggested research questions or topics which may be the basis for follow-on theses. Although these questions are framed specifically towards aviation duties, the same questions could be asked of a number of duties within the Coast Guard, such as marine safety or afloat duties.

1. Which duties at air stations can be performed by personnel other than aviators?

A series of job analyses of duties at air stations would be necessary to fully answer this question; however, this research indicates that the support departments are the most promising areas to replace aviators.

2. **What are the costs and benefits of replacing aviators with support personnel?**

If a job analysis determines that some duties at air stations could be better performed by non-aviators, this cost/benefit analysis would determine if replacing aviators would be an economically sound decision.

3. **What is the influence and extent of the conflicts between primary and collateral duties?**

This research examined only collateral duty satisfaction, but conflicts between primary and collateral duties (such as balancing OER influence, time, and proficiency between them) were found. These conflicts may be very influential on overall satisfaction, so the causes, influence, and extent of these conflicts should be examined.

4. **How does the self perception of an individual as either an officer or an aviator affect collateral duty satisfaction?**

This question is beyond the scope of this research, but can possibly be answered using this data. The answer to this question would be very helpful in making personnel assignment and placement decisions.

This research is intended as a catalyst for further research and action. If nothing else, perhaps it will stimulate discussion over how to improve collateral duties. It is these questions, discussions, and ultimate actions that will continuously improve the Coast Guard.

APPENDIX A

Collateral Duty Satisfaction Questionnaire

Fellow Coast Guard Aviator,

I am conducting research about Coast Guard aviator's satisfaction with their collateral duties to determine if there can be a better fit between aviators and collateral duties. I need you to take about 10 or 20 minutes of your time and complete the attached questionnaire. This survey will allow me to evaluate the relative satisfaction ratings of collateral duties across Coast Guard air stations. Using this data, I want to determine some basic characteristics of collateral duties that are viewed as most satisfying.

Please be very candid; your true opinions are essential for this research. Your answers will be held in strictest confidence. You don't have to write your name on the answer sheet.

How can this study be used? At local levels, supervisors may realize they can change some of the job characteristics and so enrich or improve some collateral duties. For higher levels in the organization, duties which might be better staffed by non-aviators may be identified, which could lead to staffing changes.

For this survey, the term collateral duty means a job at a USCG air station you are assigned when not flying. Do not consider duties assigned in previous units that were not USCG air stations, such as staff tours, prior military service, or cutters.

This survey is coming out in the midst of the summer transfer season, and I realize quite a few of you will not have much experience in your current collateral duties. Please answer the questions regarding collateral duties focusing on the one collateral duty you are most familiar with. This is usually a current duty, or, if you recently changed collateral duties or duty stations, a very recent collateral duty.

When finished, please mail back to me as soon as possible **both** the questionnaire and answer sheet using the enclosed envelope. I will start the data analysis on 15 September, so will need your responses by then.

If you have comments or questions, please write them on the questionnaire, or call me at (408) 373-4089.

Thank you again for your time and quick response.

LCDR Bob Morrison

PLEASE FILL IN THE DOTS ON THE ANSWER SHEET

1. What is your rank?

   1. ENS
   2. LTJG
   3. LT
   4. LCDR
   5. CDR

2. My commissioning source is ___.

   1. Academy
   2. AVCAD
   3. Direct Commission / Inter-service transfer
   4. OCS - prior USCG enlisted
   5. OCS

   Other (please specify here:_____________________)

3. What is your age?

   1. 21 - 25.
   2. 26 - 30.
   3. 31 - 35.
   4. 36 - 40.
   5. Over 40.

4. What is your pilot/flight officer qualification?

   1. Copilot.
   2. First Pilot / ACO
   3. Aircraft Commander / CICO
   4. Instructor.
   5. Flight Examiner.

5. Overall, I am satisfied with my Coast Guard career.

   1. Strongly disagree.
   2. Disagree.
   3. Neutral.
   4. Agree.
   5. Strongly agree.

6. I would rather fly aircraft my entire career than have one or more rotational tours out of the cockpit.

   1. Strongly disagree.
   2. Disagree.
   3. Neutral.
   4. Agree.
   5. Strongly agree.

7. All other things being equal, I intend to stay in the Coast Guard at least until 20 year retirement.

   1. Will certainly resign before.
   2. Will probably resign before.
   3. Undecided.
   4. Will probably stay in.
   5. Will certainly stay in.

8. I am generally satisfied with the kind of work I do, and can expect to do, in the Coast Guard.

   1. Strongly disagree.
   2. Disagree.
   3. Neutral.
   4. Agree.
   5. Strongly agree.

9. To what extent do you think of yourself as a Coast Guard aviator or a Coast Guard officer?

   1. Mostly as an aviator.
   2. Tend to favor an aviator.
   3. Equally an aviator and officer.
   4. Tend to favor an officer.
   5. Mostly as an officer.

10. I am presently assigned ___ collateral duties.

    1. 1.
    2. 2.
    3. 3.
    4. 4.
    5. 5 or more.

11. My OER reflects the following balance between my collateral duties and my primary aviation duty:

    1. Collateral duties stressed way too much.
    2. Collateral duties stressed somewhat too much.
    3. Adequate balance between primary and collateral duties.
    4. Primary duty stressed somewhat too much.
    5. Primary duty stressed way too much.

12. The influence my collateral duties has on my overall satisfaction with my Coast Guard career is ___.

1. No influence.
2. Slight influence.
3. Moderate influence.
4. Fairly strong influence.
5. Strong influence.

Please complete the remainder of this survey for the **one collateral duty you are most familiar with. This is usually a current duty, or, if you recently changed collateral duties or duty stations, a very recent collateral duty.** The title of this "primary" collateral duty is (fill in below).

____

13. I have been assigned this "primary" collateral duty for:

1. Less than 3 months.
2. 3 - 6 months.
3. 6 - 12 months.
4. 1 - 2 years.
5. More than 2 years.

14. The total number of aviators assigned to the air station where this collateral duty is performed is:

1. 15 or less.
2. 16 - 25.
3. 26 - 35.
4. 36 - 45.
5. More than 45.

NOTE: Questions 15 and 16 are the same question. If you can't find the answer under the choices for question 15, look under question 16 choices. Please only fill in only **one** dot next to **either 15 or 16** on the answer sheet.

15. My "primary" collateral duty is part of the ___ Department.

1. Administration
2. Engineering
3. Medical
4. NAFA
5. Operations

16. My "primary" collateral duty is part of the ___ Department.

1. Public Works
2. Safety
3. Supply
4. Other (please specify) ______________________________.

17. Which one of the following best describes the position of your collateral duty in the chain of command?

1. Department Head.
2. Assistant Department Head.
3. Division Officer.
4. Assistant Division Officer.
5. Other assigned officer.

18. I would evaluate my ability to influence my assignment to this particular collateral duty as:

1. Poor.
2. Somewhat poor.
3. Moderate.
4. Fairly good.
5. Excellent.

19. How much variety is there in your collateral duty? That is, to what extent does the collateral duty require you to do many different things at work, using a variety of your skills and talents?

1. None to very little.
2. A little.
3. Moderate variety.
4. A good amount.
5. Very much.

20. To what extent does your collateral duty involve doing a "whole" and identifiable piece of work? That is, does the collateral duty involve a complete piece of work that has an obvious beginning and end?

1. Very little, my efforts cannot be seen at the end.
2. A somewhat small extent.
3. A moderate extent, my efforts are visible in the end.
4. A fairly large extent.
5. A great extent, my efforts are visible from start to finish.

21. To what extent do managers or co-workers let you know how well you are doing on your collateral duty?

1. I receive no feedback from them.
2. I receive a somewhat small amount of feedback from them.
3. I receive a moderate amount of feedback from them.
4. I receive a fairly large amount of feedback from them.
5. I receive a great deal of feedback from them.

22. In general, how significant or important is your collateral duty? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1. Not very significant.
2. Slightly significant.
3. Moderately significant.
4. Fairly highly significant.
5. Highly significant.

23. To what extent does your collateral duty require you to work closely with other people (either within or outside the air station)?

1. A minimal extent.
2. A somewhat small extent.
3. A moderate extent.
4. A fairly large extent.
5. A great extent.

24. How much autonomy is there in your collateral duty? That is, to what extent does your collateral duty permit you to decide on your own how to go about the work?

1. A minimal amount.
2. A somewhat small amount.
3. A moderate amount.
4. A fairly large amount.
5. A great amount.

25. To what extent does the collateral duty itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing - aside from any "feedback" co-workers or supervisors may provide?

1. A minimal extent.
2. A somewhat small extent.
3. A moderate extent.
4. A fairly large extent.
5. A great extent.

Questions 26 - 34: Please indicate how **satisfied** you are with each aspect of your collateral duty listed below. Use the following scale for your answers:

1. Dissatisfied.
2. Somewhat dissatisfied.
3. Neutral.
4. Somewhat satisfied.
5. Satisfied.

26. The people I talk to and work with on my collateral duty.

27. The degree of respect I receive from my boss.

28. The opportunity to lead and/or supervise others.

29. The amount of guidance I receive from my supervisor.

30. The chance to get to know other people while at work.

31. The overall quality of the supervision I receive in my work.

32. The amount of support I receive from my supervisor.

33. The chance to help other people while at work.

33. The chance to help other people while at work.

34. The degree of fair treatment I receive from my boss.

For questions 35 - 55: Please indicate how **you personally feel about your collateral duty**. Each of the statements below is something that a person might say about his or her collateral duty. You are to indicate yo own personal **feelings** about your collateral duty using the following scale:

1. Disagree.
2. Somewhat disagree.
3. Uncertain or Neutral.
4. Somewhat agree.
5. Agree.

35. Just doing the work required by the collateral duty provides many chances for me to figure out how well I am doing.

36. This collateral duty is one where a lot of people can be affected by how well the work gets done.

37. The collateral duty itself gives me considerable opportunity for independence and freedom in how I do the work.

38. In general, I am satisfied with this collateral duty.

39. This collateral duty requires a lot of cooperative work with other people.

40. The supervisors and co-workers on this collateral duty almost never give me any feedback about how well I am doing in my collateral duty.

41. This collateral duty provides me the chance to completely finish the pieces of work I begin.

42. The collateral duty itself provides very few clues about whether or not I am performing well.

43. My collateral duty can be done adequately by a person working alone - without talking or checking with other people.

44. This collateral duty is quite simple and repetitive.

45. My collateral duty enables me to gain knowledge, skills, or abilities for my professional development as an aviator.

46. My collateral duty enables me to gain knowledge, skills, or abilities for my professional development as a Coast Guard officer.

47. This collateral duty is arranged so that I do not have the chance to do an entire piece of work from beginning to end.

48. This collateral duty denies me any chance to use my personal initiative or judgement in carrying out the work.

49. Only a Coast Guard aviator could properly complete my collateral duty.

Answers:
1. Disagree.
2. Somewhat disagree.
3. Uncertain or Neutral.
4. Somewhat agree.
5. Agree.

50. Only a Coast Guard officer could properly complete my collateral duty.

51. This collateral duty requires me to use a number of complex or high-level skills.

52. The collateral duty itself is not very significant or important in the broader scheme of things.

53. Supervisors often let me know how well they think I am performing the collateral duty.

54. My collateral duty enables me to use my leadership skills.

55. I frequently think of quitting this collateral duty and requesting another one.

56. I would be interested in the results of this research project.

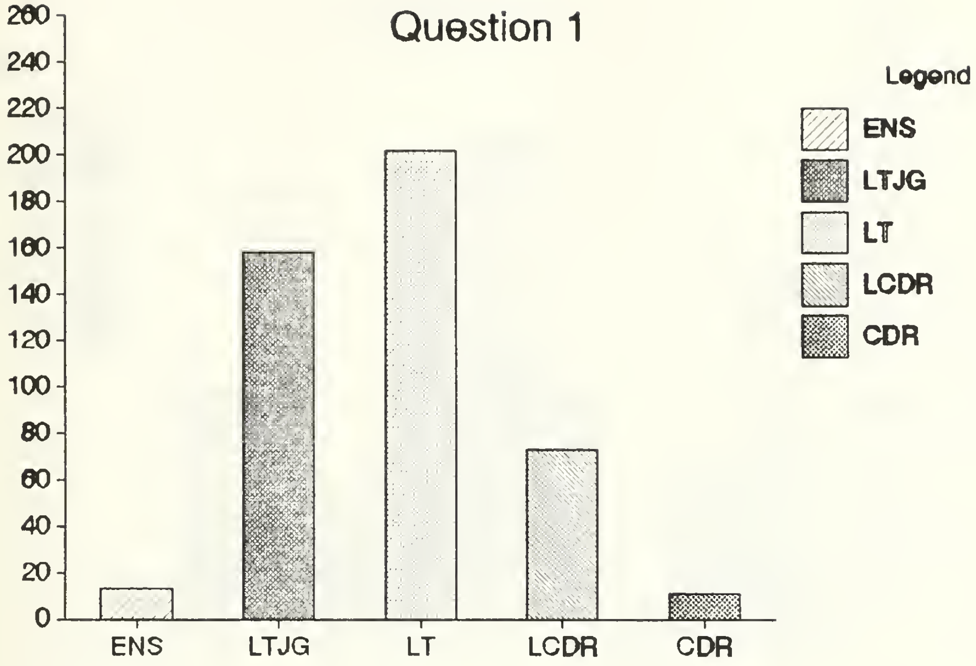
    1. Not really.
    2. Yes, how about writing a summary article in Flight Lines.

Thank you for your honest answers. Please place both this questionnaire and the answer sheet in the envelope provided and mail it as soon as possible. Thanks again for your help.

COMMENTS:

APPENDIX B

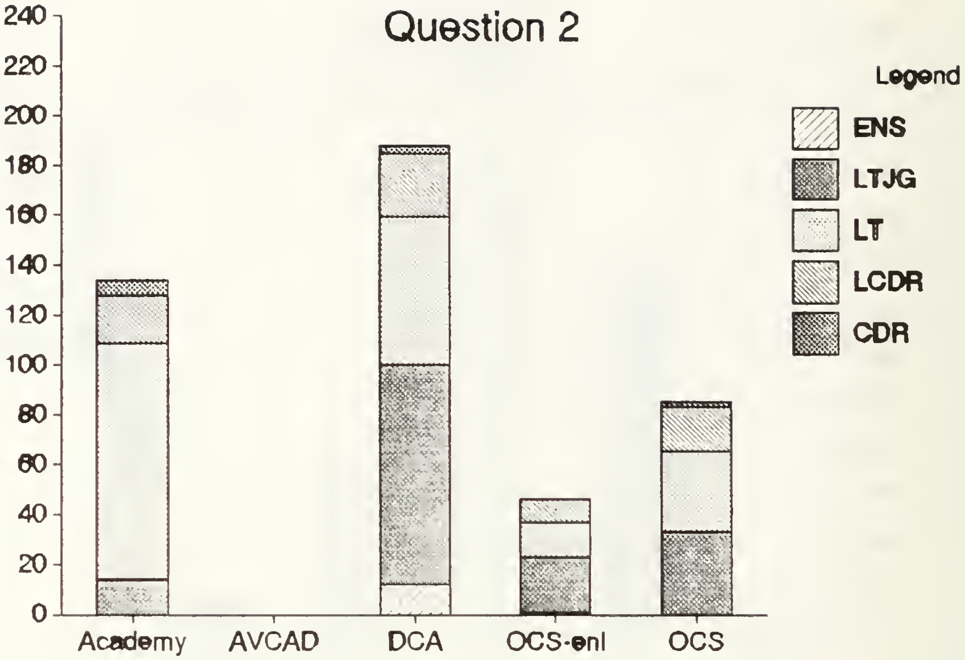
SURVEY RESPONSES BY QUESTION



1. What is your rank?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	13	2.8	13	2.8
2.	158	34.6	171	37.4
3.	202	44.2	373	81.6
4.	73	16.0	446	97.6
5.	11	2.4	457	100.0

N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.805	0.824	0.679



2. My commissioning source is ___.

```
                                     CUMMULATIVE    CUMMULATIVE
     FREQUENCY     PERCENT           FREQUENCY      PERCENT

1.         134       29.6                  134        29.6
2.           .          .                    .           .
3.         188       41.5                  322        71.1
4.          46       10.2                  368        81.2
5.          85       18.8                  453       100.0


   N     N MISSING     MEAN     STDDEV   VARIANCE

  453        4           .          .          .
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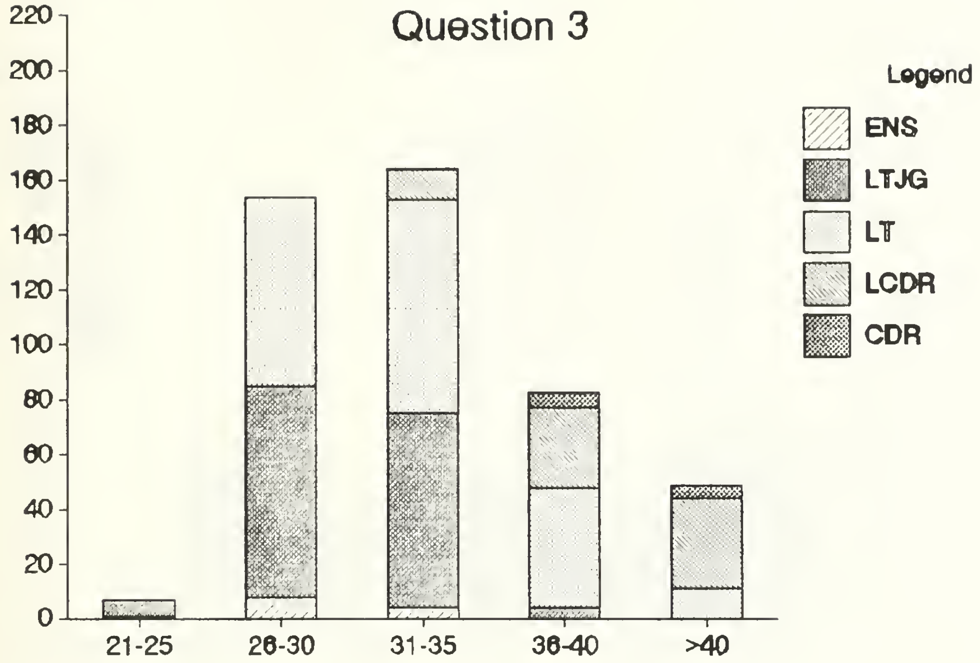
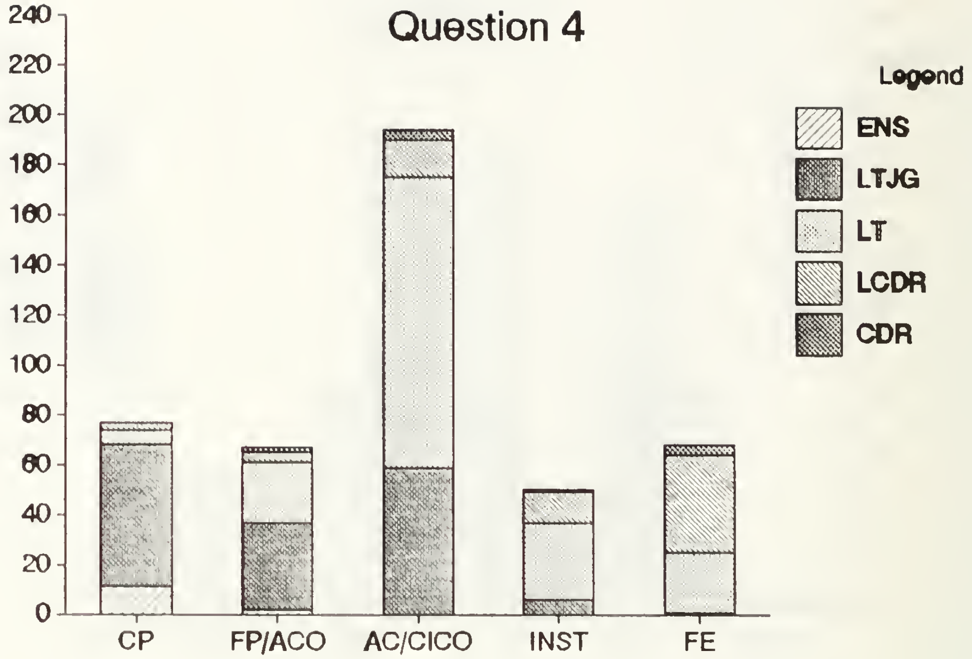


3. What is your age?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	7	1.5	7	1.5
2.	154	33.7	161	35.2
3.	164	35.9	325	71.1
4.	83	18.2	408	89.3
5.	49	10.7	457	100.0

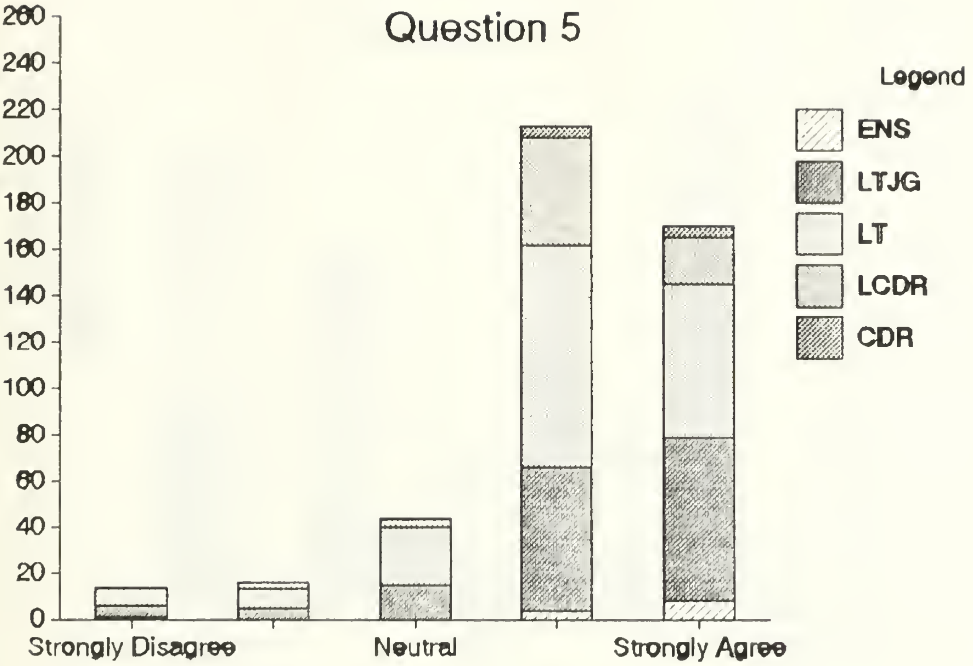
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.028	1.005	1.010



4. What is your pilot/flight officer qualification?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	77	16.9	77	16.9
2.	67	14.7	144	31.6
3.	194	42.5	338	74.1
4.	50	11.0	388	85.1
5.	68	14.9	456	100.0

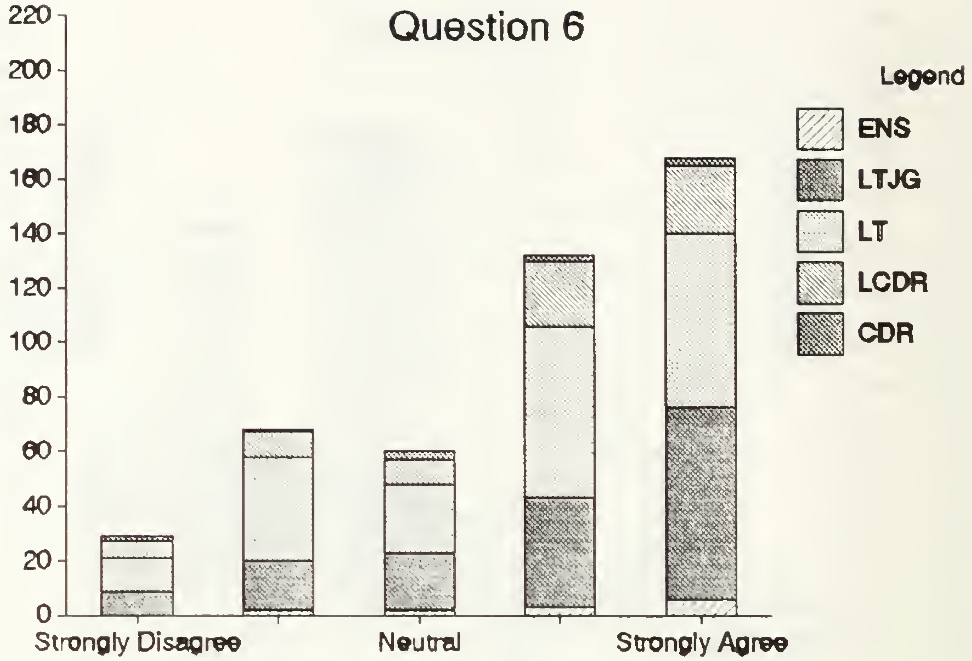
N	N MISSING	MEAN	STDDEV	VARIANCE
456	1	2.923	1.235	1.525



5. Overall, I am satisfied with my Coast Guard career.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	14	3.1	14	3.1
2.	16	3.5	30	6.6
3.	44	9.6	74	16.2
4.	213	46.6	287	62.8
5.	170	37.2	457	100.0

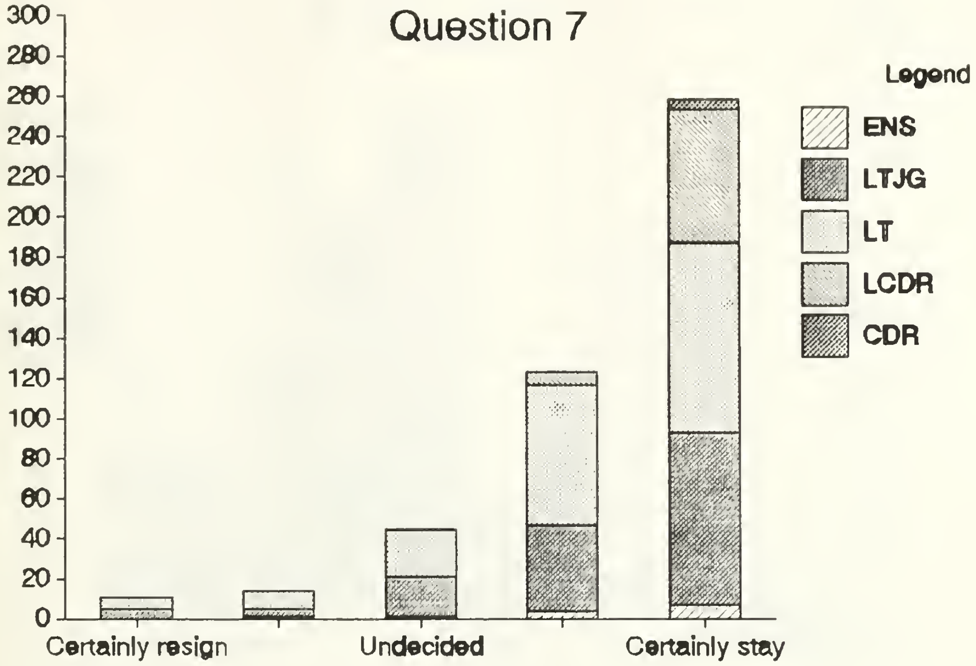
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	4.113	0.934	0.872



6. I would rather fly aircraft my entire career than have one or more rotational tours out of the cockpit.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	29	6.3	29	6.3
2.	68	14.9	97	21.2
3.	60	13.1	157	34.4
4.	132	28.9	289	63.2
5.	168	36.8	457	100.0

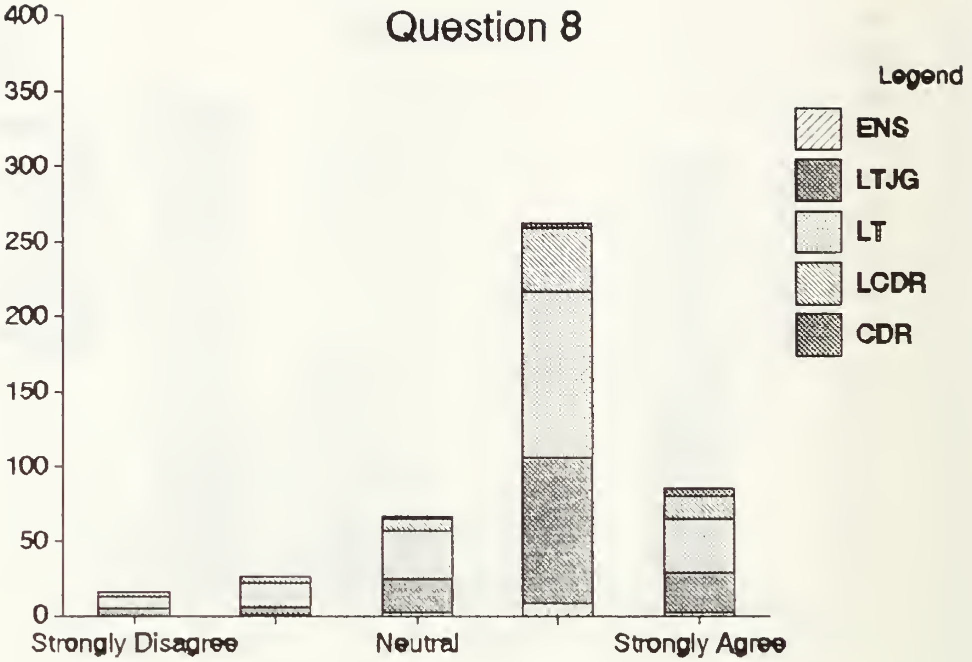
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.748	1.267	1.605



7. All other thing being equal, I intend to stay in the Coast Guard at least until 20 year retirement.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	11	2.4	11	2.4
2.	14	3.1	25	5.5
3.	45	9.8	70	15.3
4.	123	26.9	193	42.2
5.	264	57.8	457	100.0

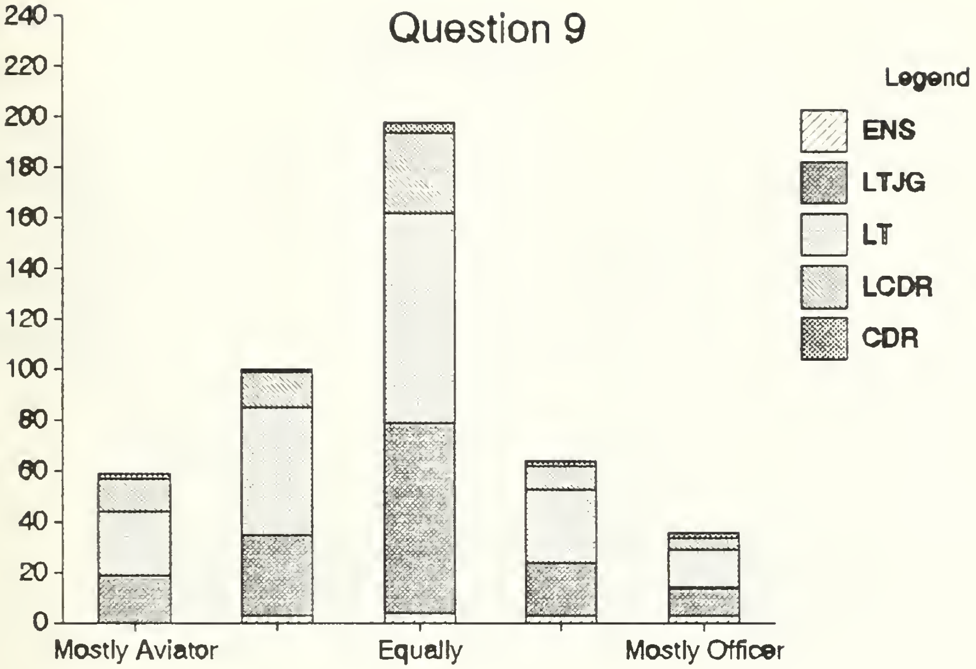
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	4.345	0.947	0.897



8. I am generally satisfied with the kind of work I do, and can expect to do, in the Coast Guard.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	16	3.5	16	3.5
2.	26	5.7	42	9.2
3.	67	14.7	109	23.9
4.	263	57.5	372	81.4
5.	85	18.6	457	100.0

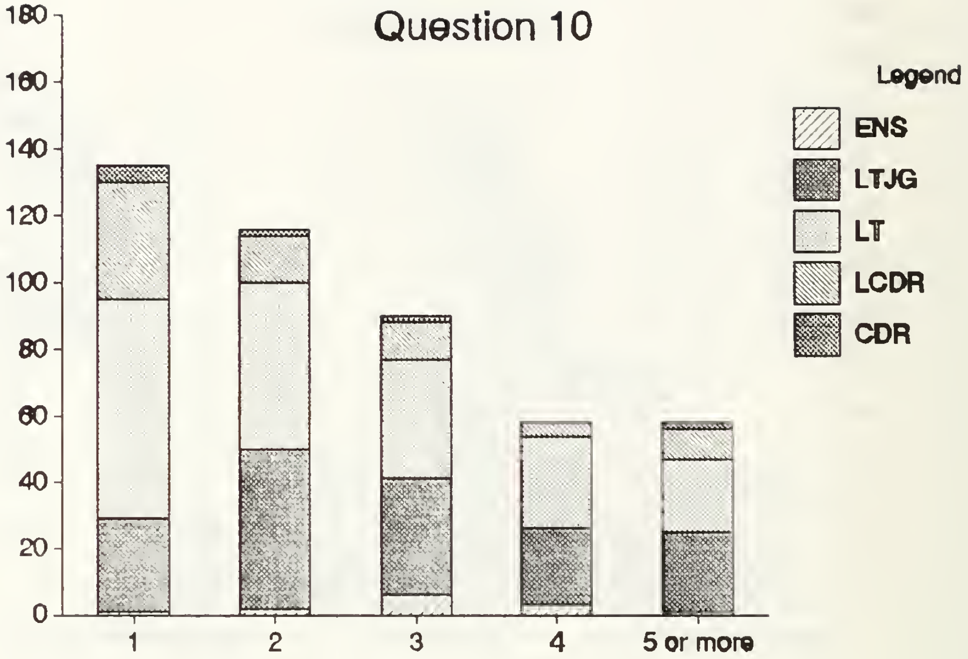
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.820	0.919	0.844



9. To what extent do you think of yourself as a Coast Guard aviator or a Coast Guard officer?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	59	12.9	59	12.9
2.	100	21.9	159	34.8
3.	198	43.3	357	78.1
4.	64	14.0	421	92.1
5.	36	7.9	457	100.0

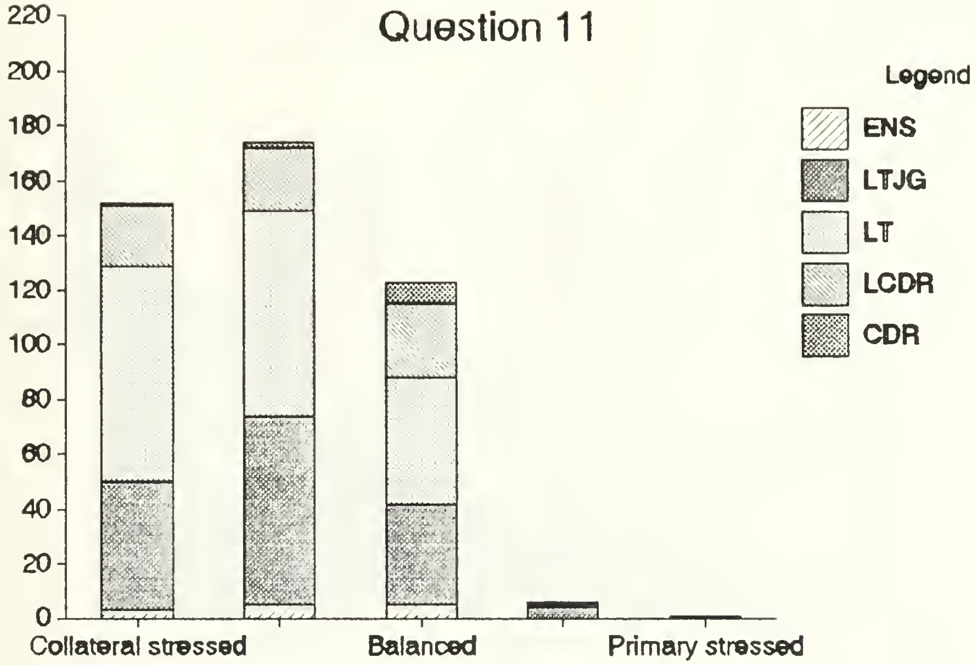
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.820	1.077	1.160



10. I am presently assigned ___ collateral duties.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	135	29.5	135	29.5
2.	116	25.4	251	54.9
3.	90	19.7	341	74.6
4.	58	12.7	399	87.3
5.	58	12.7	457	100.0

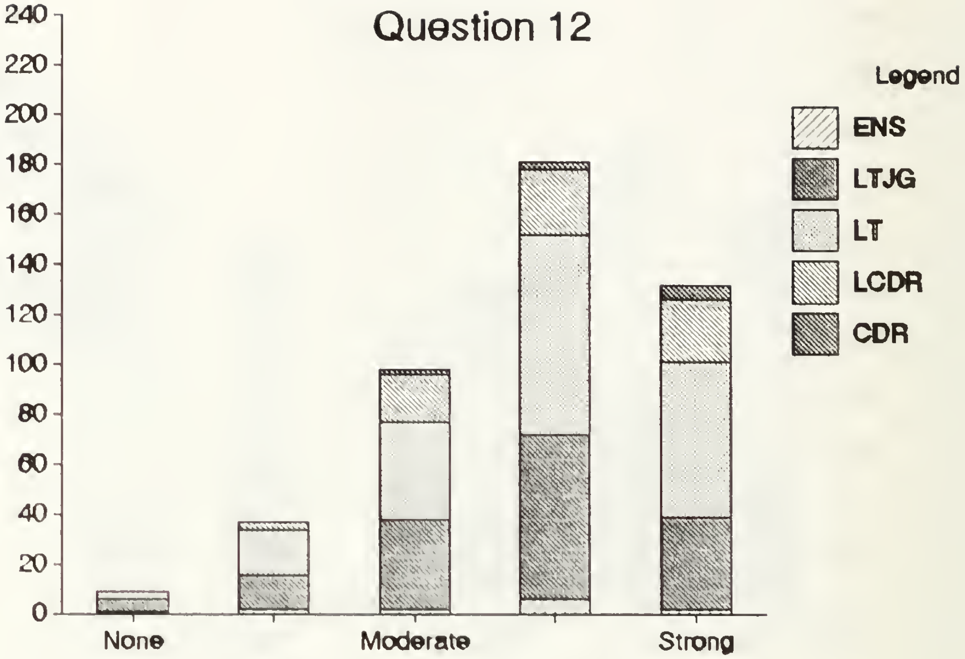
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.536	1.363	1.858



11. My OER reflects the following balance between my collateral duties and my primary aviation duty:

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	152	33.3	152	33.3
2.	174	38.2	326	71.5
3.	123	27.0	449	98.5
4.	6	1.3	455	99.8
5.	1	0.2	456	100.0

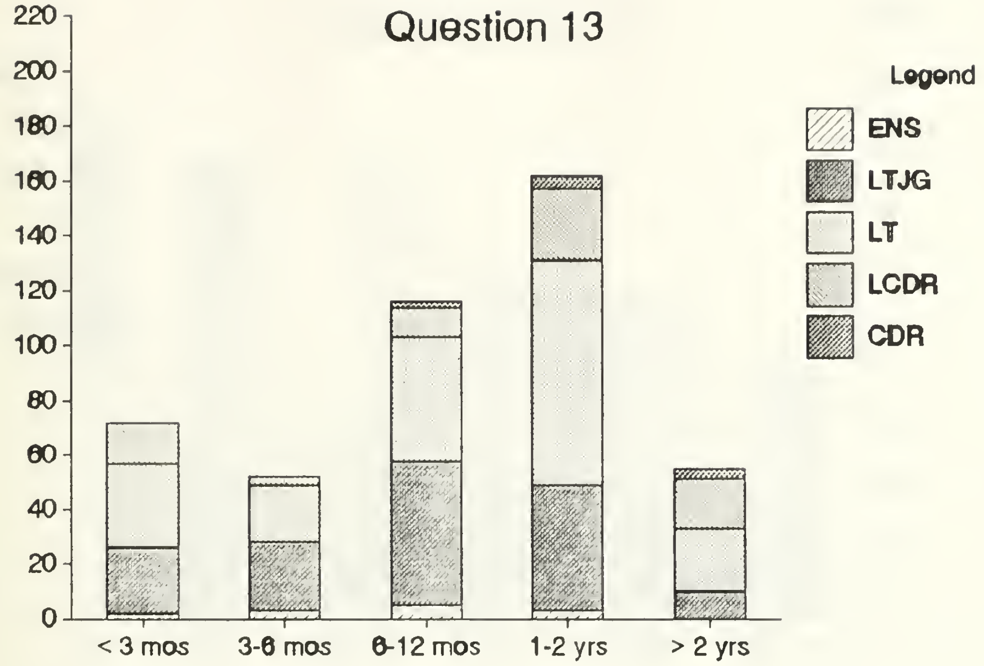
N	N MISSING	MEAN	STDDEV	VARIANCE
456	1	1.969	0.822	0.675



12. The influence my collateral duties has on my overall satisfaction with my Coast Guard career is ___.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	9	2.0	9	2.0
2.	37	8.1	46	10.1
3.	98	21.4	144	31.5
4.	181	39.6	325	71.1
5.	132	28.9	457	100.0

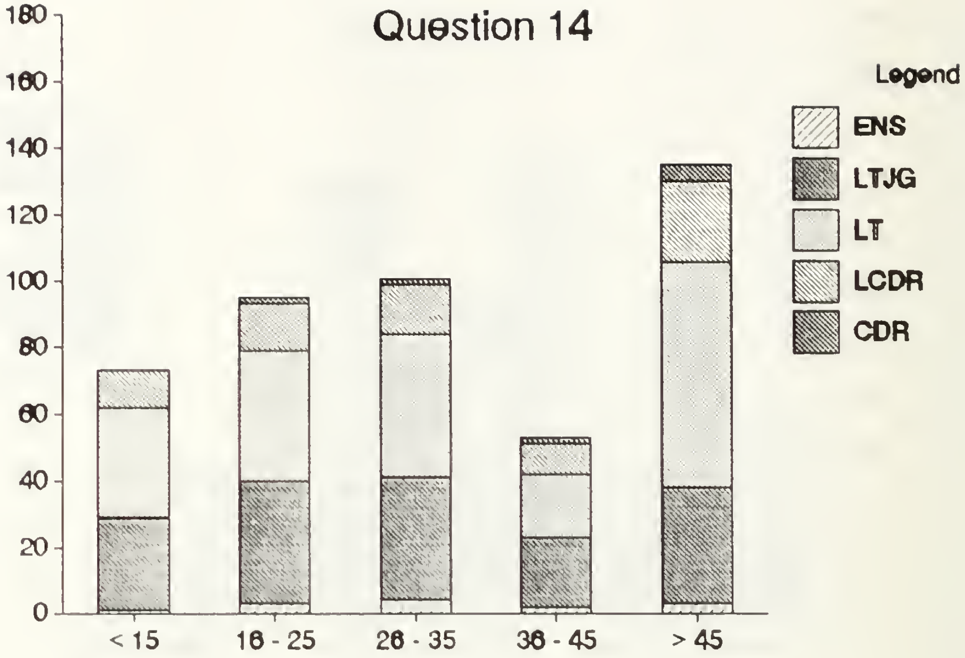
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.853	0.992	0.985



13. I have been assigned this "primary" collateral duty for:

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	72	15.8	72	15.8
2.	52	11.4	124	27.1
3.	116	25.4	240	52.5
4.	162	35.4	402	88.0
5.	55	12.0	457	100.0

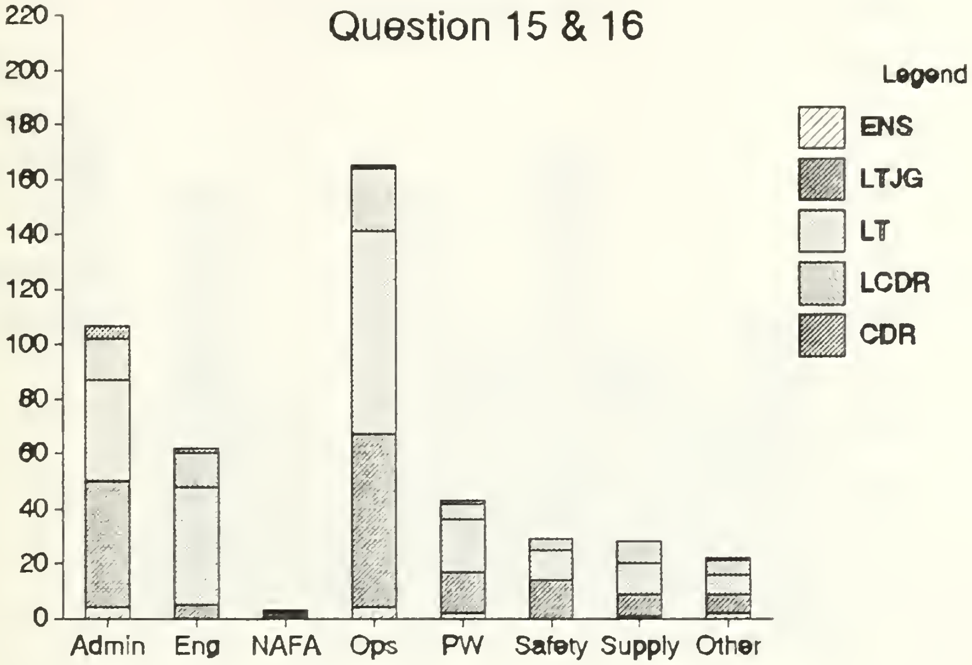
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.166	1.247	1.555



14. The total number of aviators assigned to the air station where this collateral duty is performed is:

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	73	16.0	73	16.0
2.	95	20.8	168	36.8
3.	101	22.1	269	58.9
4.	53	11.6	322	70.5
5.	135	29.5	457	100.0

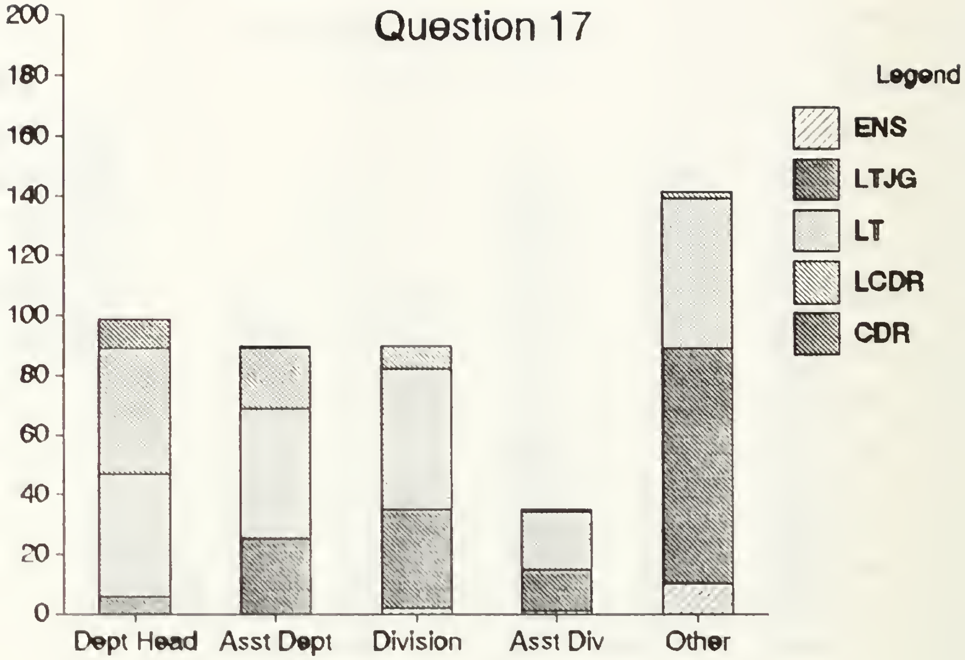
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.179	1.454	2.116



15 & 16. My "primary" collateral duty is part of the ___ Department.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1. Admin	107	23.4	107	23.4
2. Eng	62	13.6	169	37.0
3. NAFA	3	0.7	172	37.7
4. Ops	165	36.2	337	73.9
5. PW	43	9.4	380	83.3
6. Safe	29	6.4	409	89.7
7. Sup	28	6.1	437	95.8
8. Oth	19	4.2	456	100.0

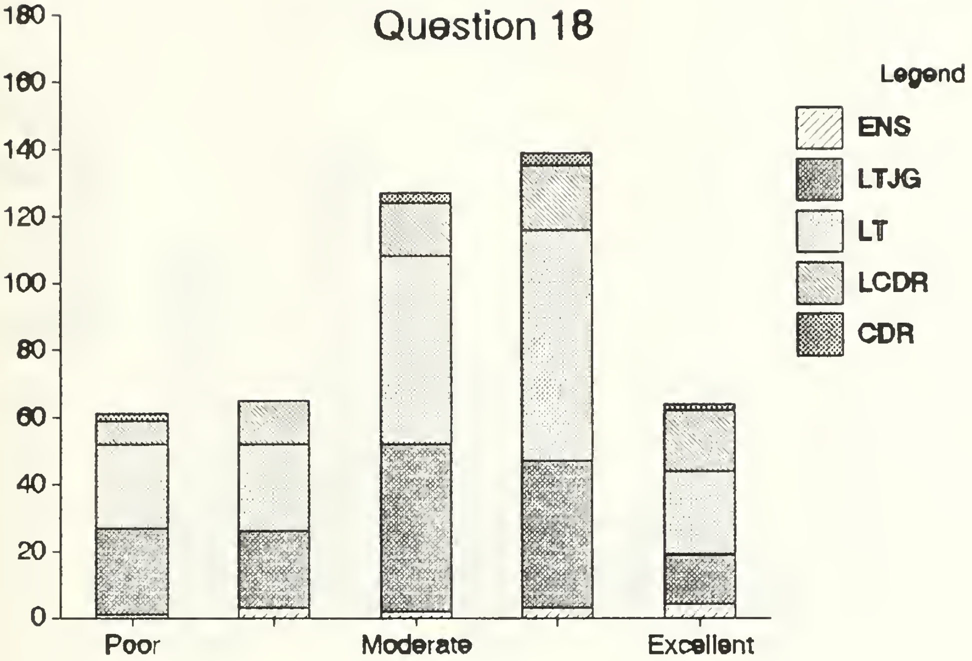
N	N MISSING	MEAN	STDDEV	VARIANCE
456	1	.	.	.



17. Which one of the following best describes the position of your collateral duty in the chain of command?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	99	21.8	99	21.8
2.	90	19.8	189	41.5
3.	90	19.8	279	61.3
4.	35	7.7	314	69.0
5.	141	31.0	455	100.0

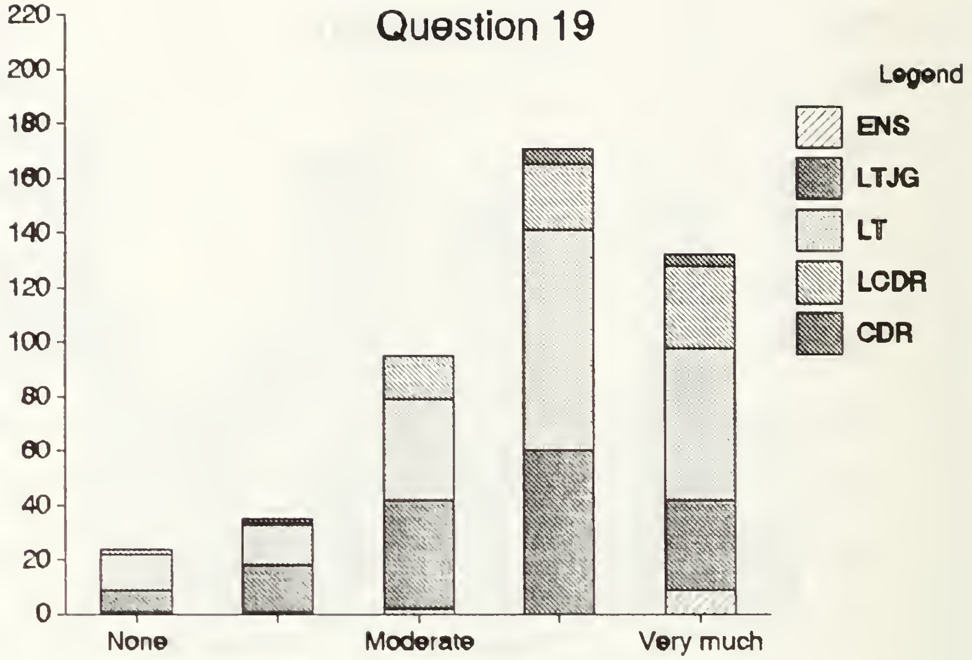
N	N MISSING	MEAN	STDDEV	VARIANCE
455	2	3.063	1.544	2.385



18. I would evaluate my ability to influence my assignment to this particular collateral duty as:

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	61	13.4	61	13.4
2.	65	14.3	126	27.6
3.	127	27.9	253	55.5
4.	139	30.5	392	86.0
5.	64	14.0	456	100.0

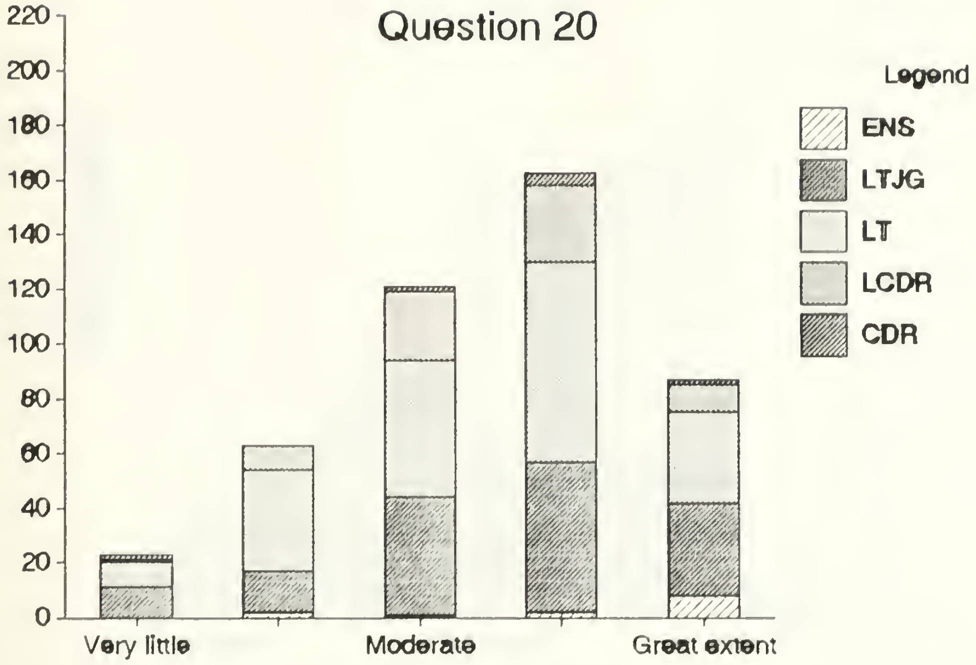
N	N MISSING	MEAN	STDDEV	VARIANCE
456	1	3.175	1.231	1.516



19. How much variety is there in your collateral duty? That is, to what extent does the collateral duty require you to do many different things at work, using a variety of your skills and talents?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	24	5.3	24	5.3
2.	35	7.7	59	12.9
3.	95	20.8	154	33.7
4.	171	37.4	325	71.1
5.	132	28.9	457	100.0

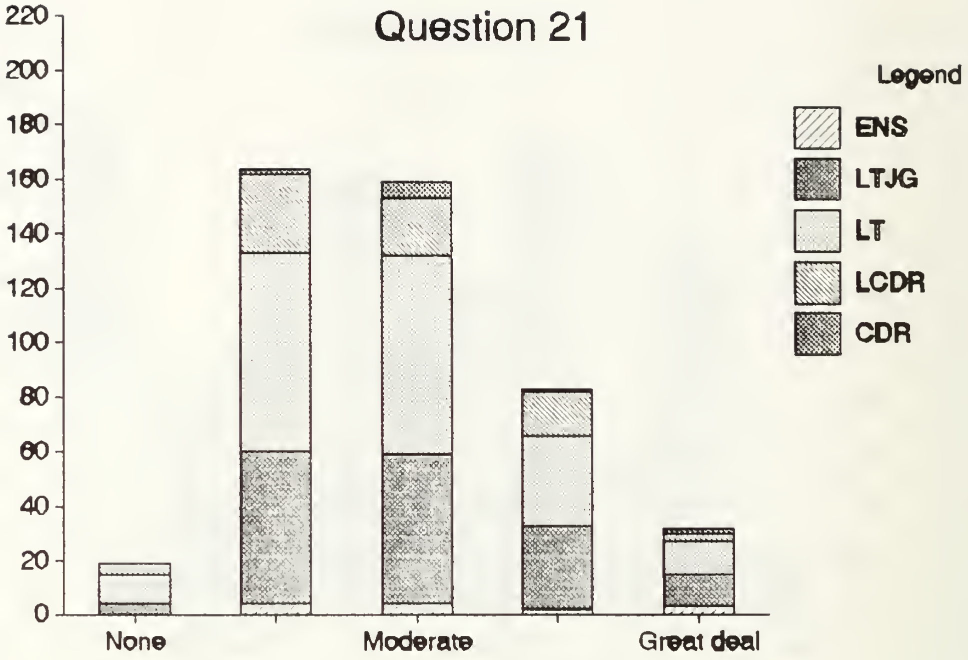
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.770	1.107	1.225



20. To what extent does your collateral duty involve doing a "whole" and identifiable piece of work? That is, does the collateral duty involve a complete piece of work that has an obvious beginning and end?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	23	5.0	23	5.0
2.	63	13.8	86	18.8
3.	121	26.5	207	45.3
4.	163	35.7	370	81.0
5.	87	19.0	457	100.0

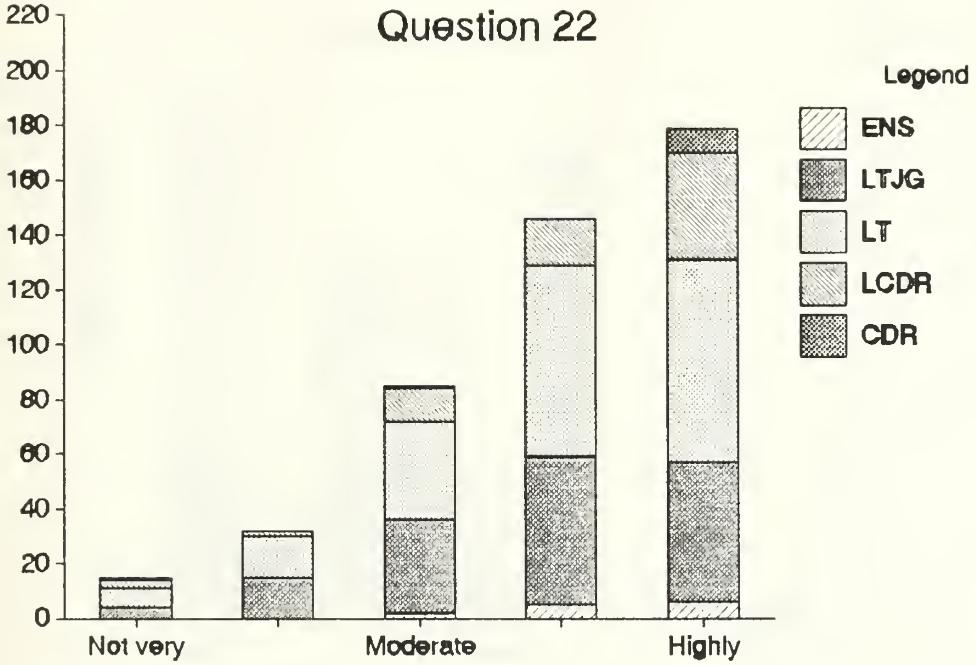
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.498	1.100	1.211



21. To what extent do managers or co-workers let you know how well you are doing on your collateral duty?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	19	4.2	19	4.2
2.	164	35.9	183	40.0
3.	159	34.8	342	74.8
4.	83	18.2	425	93.0
5.	32	7.0	457	100.0

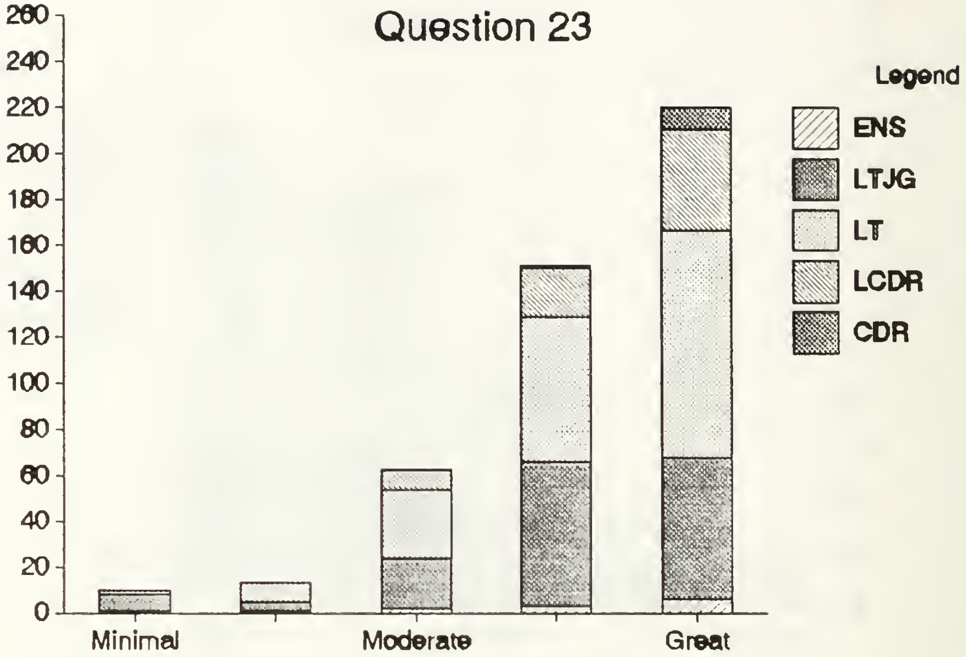
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.879	0.987	0.974



22. In general, how significant or important is your collateral duty? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	15	3.3	15	3.3
2.	32	7.0	47	10.3
3.	85	18.6	132	28.9
4.	146	31.9	278	60.8
5.	179	39.2	457	100.0

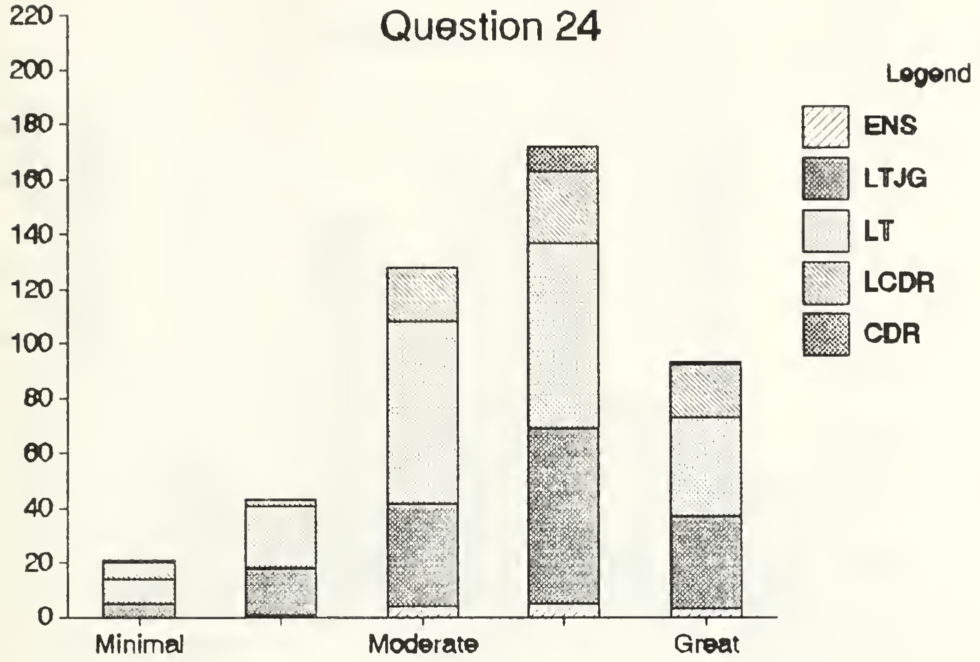
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.967	1.074	1.154



23. To what extent does your collateral duty require you to work closely with other people (either within or outside the air station)?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	10	2.2	10	2.2
2.	13	2.8	23	5.0
3.	63	13.8	86	18.8
4.	151	33.0	237	51.9
5.	220	48.1	457	100.0

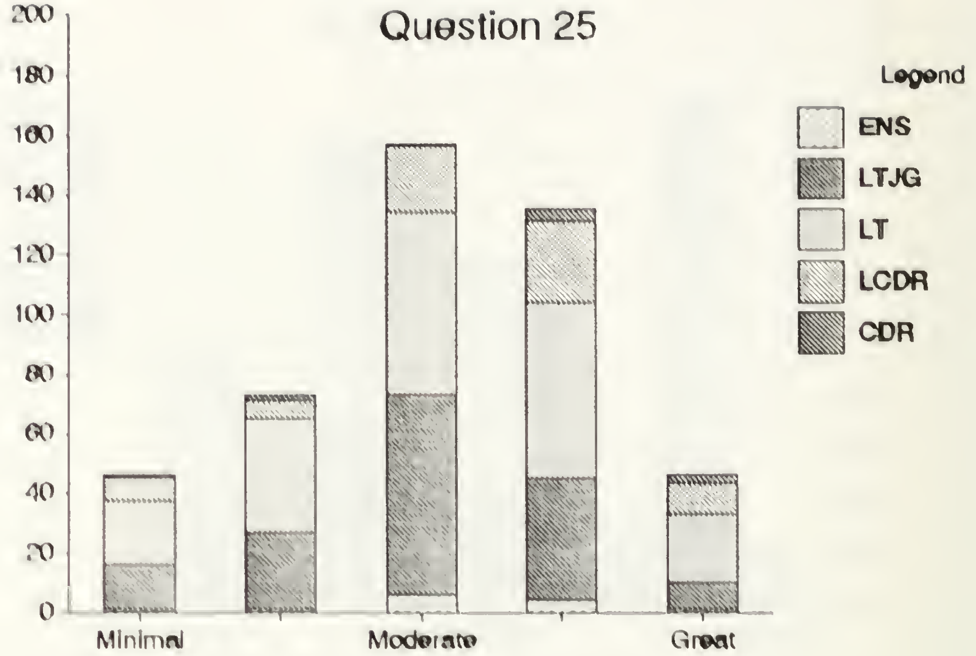
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	4.221	0.939	0.883



24. How much autonomy is there in your collateral duty? That is, to what extent does your collateral duty permit you to decide on your own how to go about the work?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	21	4.6	21	4.6
2.	43	9.4	64	14.0
3.	128	28.0	192	42.0
4.	172	37.6	364	79.6
5.	93	20.4	457	100.0

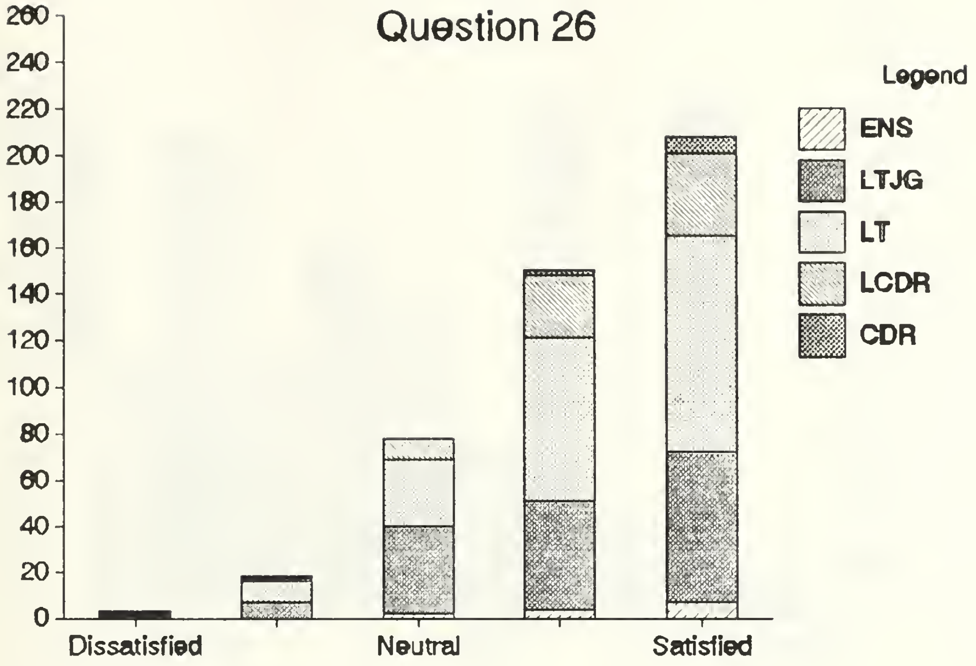
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.597	1.055	1.113



25. To what extent does the collateral duty itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing - aside from any "feedback" co-workers or supervisors may provide?

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	46	10.1	46	10.1
2.	73	16.0	119	26.0
3.	157	34.4	276	60.4
4.	135	29.5	411	89.9
5.	46	10.1	457	100.0

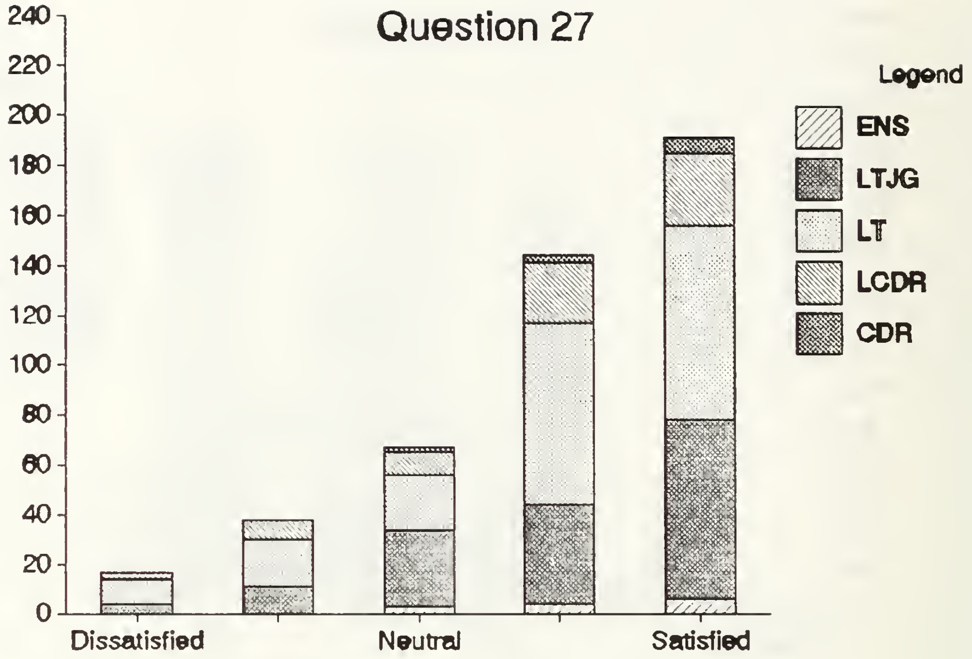
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.135	1.115	1.244



26. The people I talk to and work with on my collateral duty.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	3	0.7	3	0.7
2.	18	3.9	21	4.6
3.	78	17.1	99	21.7
4.	150	32.8	249	54.5
5.	208	45.5	457	100.0

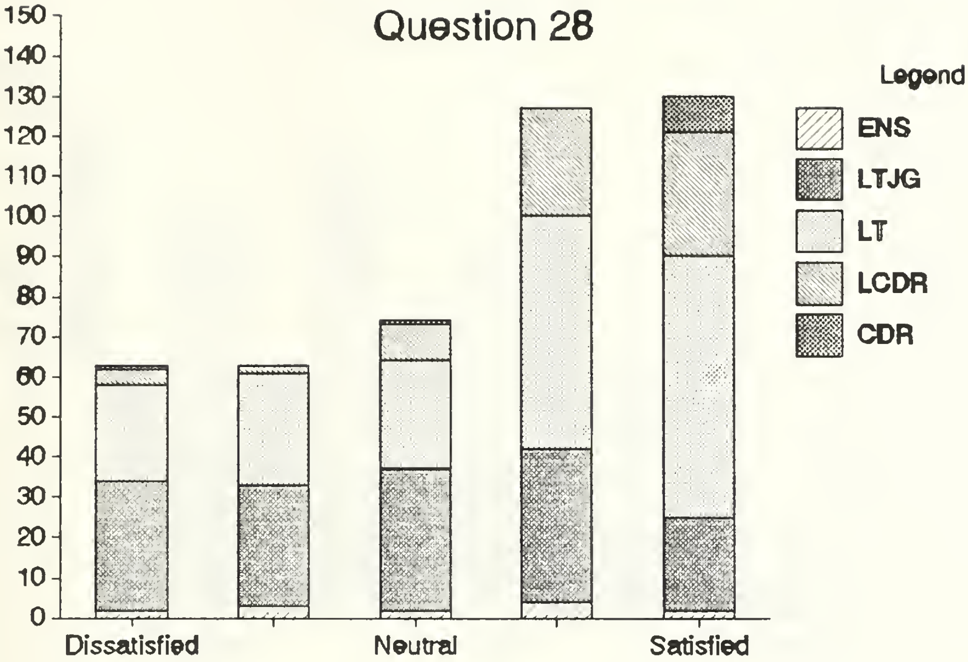
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	4.185	0.899	0.809



27. The degree of respect I receive from my boss.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	17	3.7	17	3.7
2.	38	8.3	55	12.0
3.	67	14.7	122	26.7
4.	144	31.5	266	58.2
5.	191	41.8	457	100.0

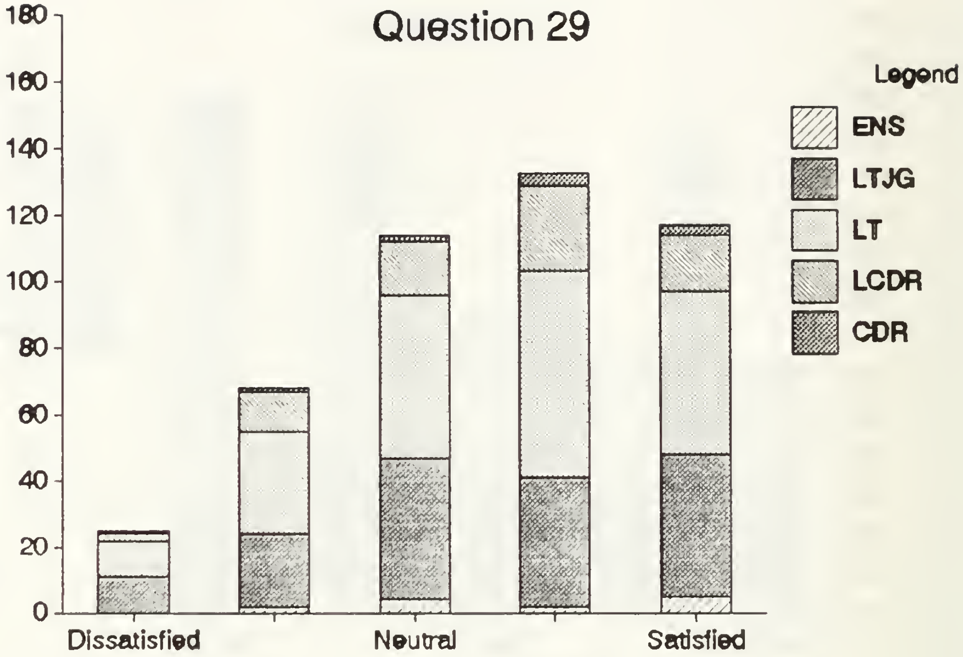
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.993	1.111	1.234



28. The opportunity to lead and/or supervise others.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	63	13.8	63	13.8
2.	63	13.8	126	27.6
3.	74	16.2	200	43.8
4.	127	27.8	327	71.6
5.	130	28.4	457	100.0

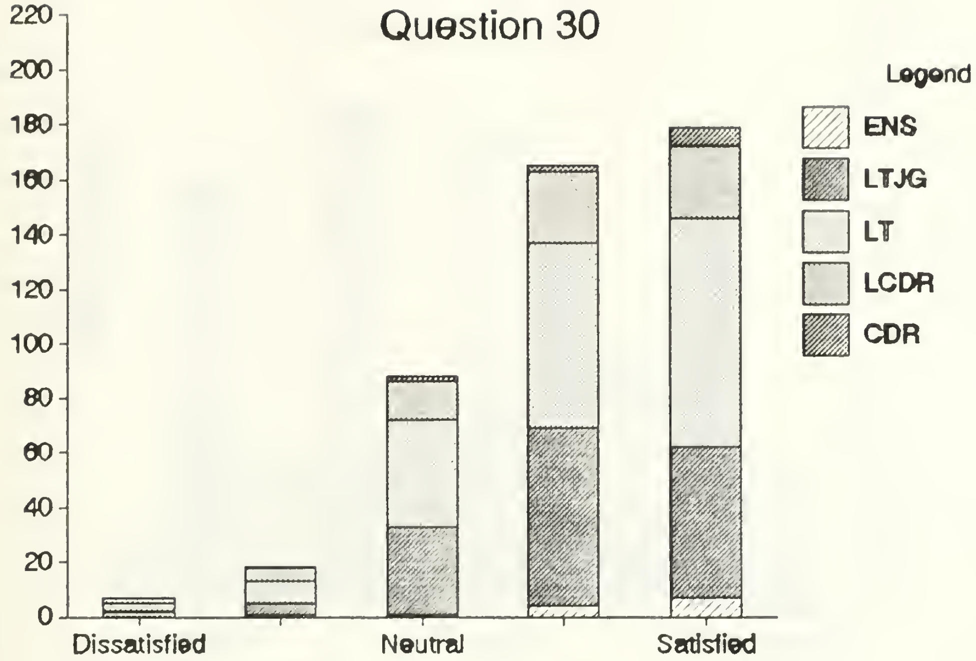
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.433	1.386	1.921



29. The amount of guidance I receive from my supervisor.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	25	5.5	25	5.5
2.	68	14.9	93	20.4
3.	114	24.9	207	45.3
4.	133	29.1	340	74.4
5.	117	25.6	457	100.0

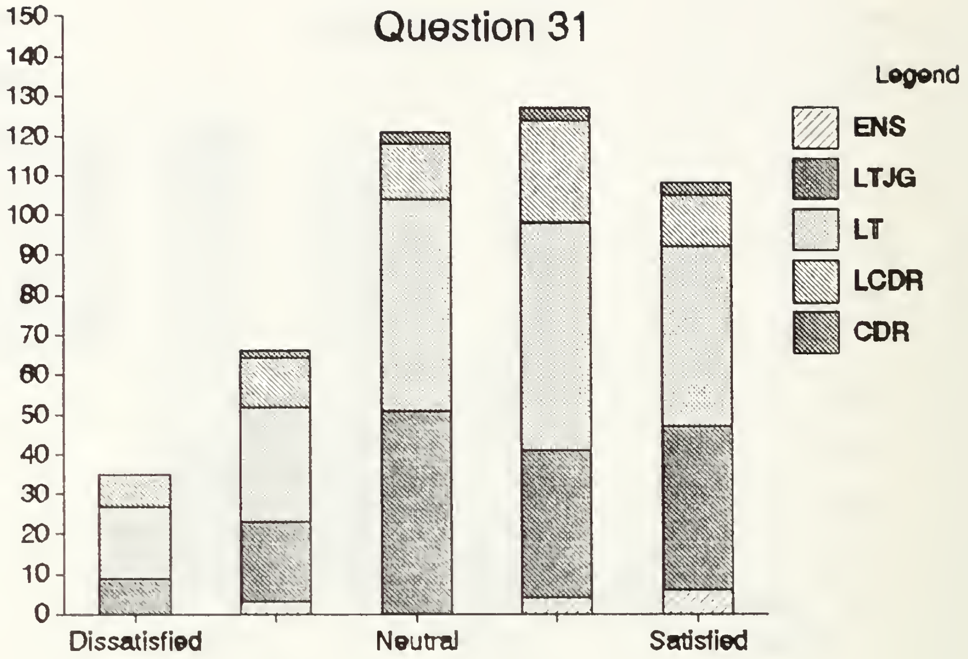
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.544	1.178	1.388



30. The chance to get to know other people while at work.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	7	1.5	7	1.5
2.	18	3.9	25	5.5
3.	88	19.3	113	24.7
4.	165	36.1	278	60.8
5.	179	39.2	457	100.0

N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	4.074	0.935	0.876



31. The overall quality of the supervision I receive in my work.

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                                  CUMMULATIVE    CUMMULATIVE
        FREQUENCY     PERCENT     FREQUENCY      PERCENT

  1.          35        7.7            35           7.7
  2.          66       14.4           101          22.1
  3.         121       26.5           222          48.6
  4.         127       27.8           349          76.4
  5.         108       23.6           457         100.0

     N     N MISSING      MEAN      STDDEV   VARIANCE

   457        0          3.452      1.213      1.472
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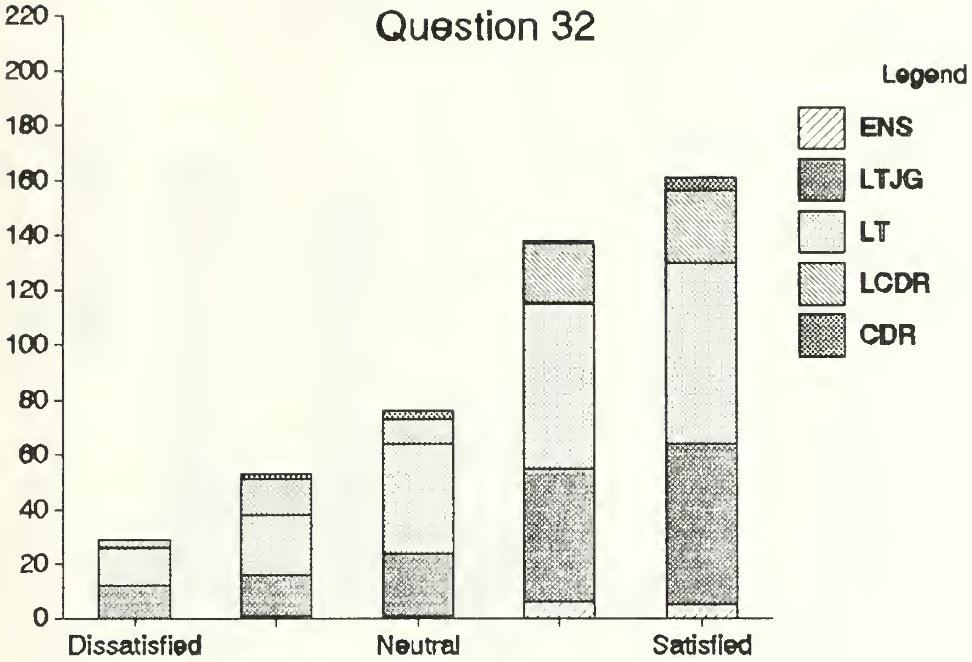
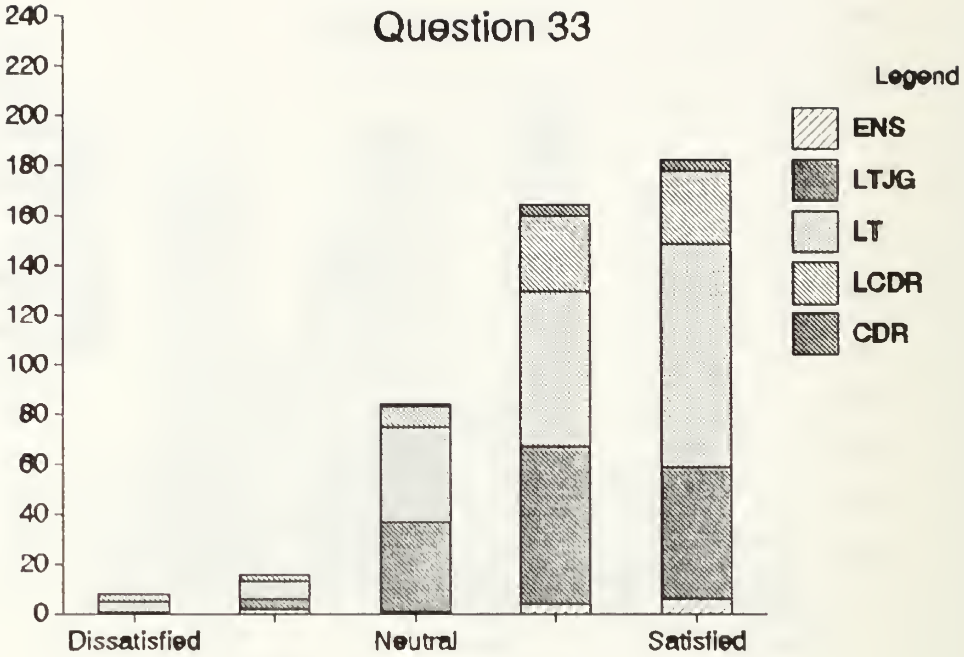


32. The amount of support I receive from my supervisor.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	29	6.3	29	6.3
2.	53	11.6	82	17.9
3.	76	16.6	158	34.6
4.	138	30.2	296	64.8
5.	161	35.2	457	100.0

N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.763	1.225	1.501



33. The chance to help other people while at work.

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                                     CUMMULATIVE    CUMMULATIVE
          FREQUENCY     PERCENT      FREQUENCY      PERCENT

1.                8        1.8               8         1.8
2.               16        3.5              24         5.3
3.               84       18.4             108        23.7
4.              165       36.2             273        59.9
5.              183       40.1             456       100.0

     N     N MISSING      MEAN      STDDEV   VARIANCE

   456         1         4.094       0.936      0.876
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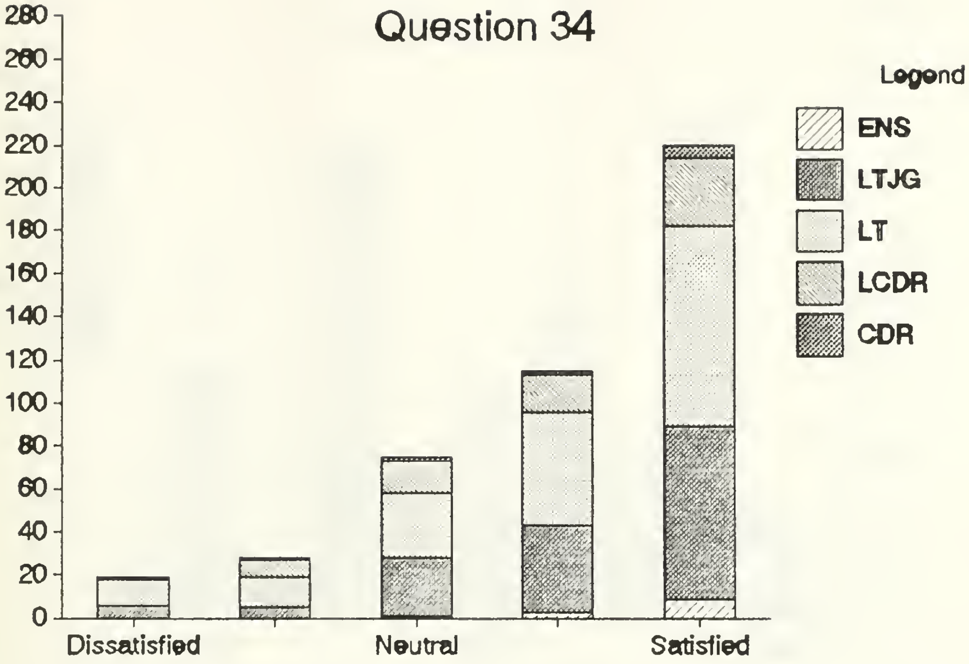
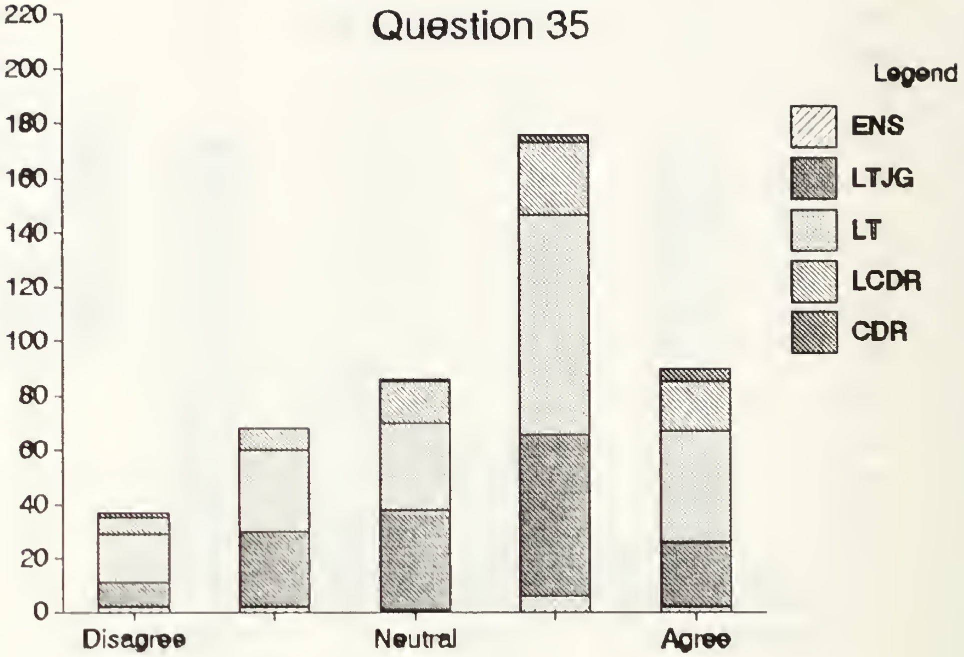


34. The degree of fair treatment I receive from my boss.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	19	4.2	19	4.2
2.	28	6.1	47	10.3
3.	75	16.4	122	26.7
4.	115	25.2	237	51.9
5.	220	48.1	457	100.0

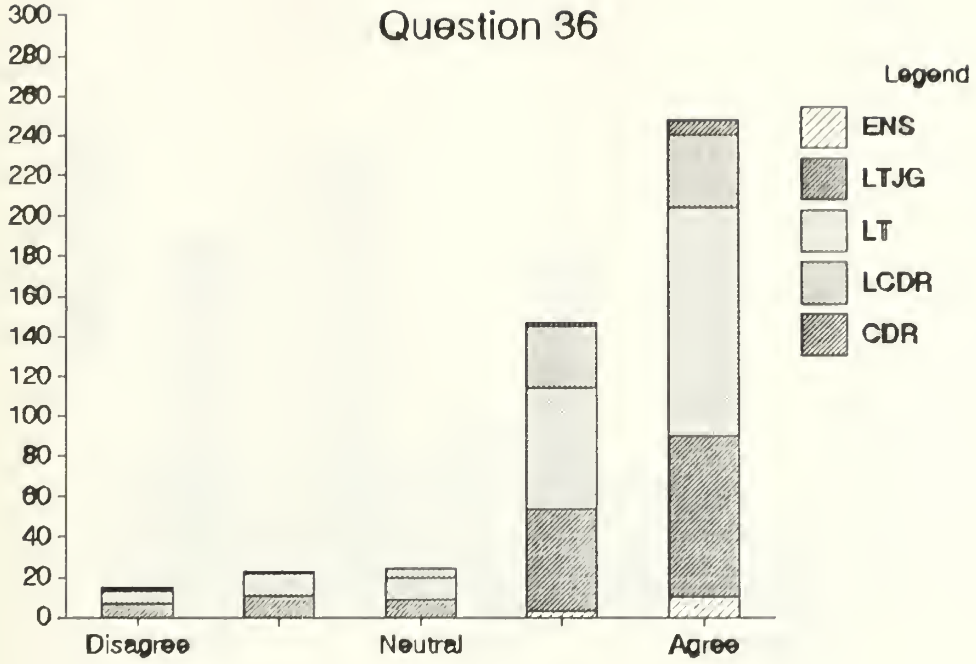
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	4.070	1.123	1.262



35. Just doing the work required by the collateral duty provides many chances for me to figure out how well I am doing.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	37	8.1	37	8.1
2.	68	14.9	105	23.0
3.	86	18.8	191	41.8
4.	176	38.5	367	80.3
5.	90	19.7	457	100.0

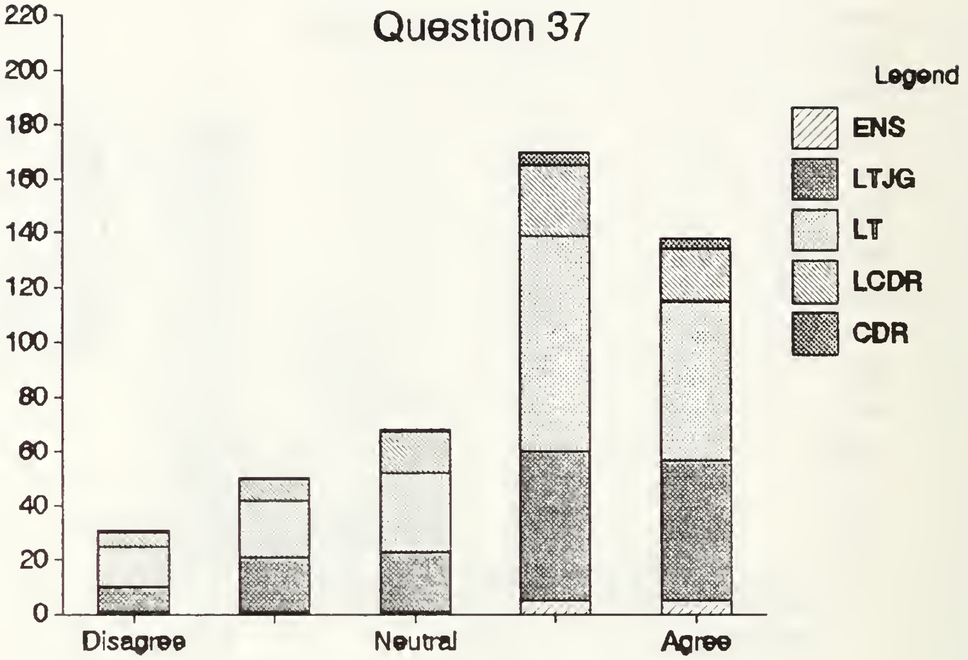
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.468	1.195	1.429



36. This collateral duty is one where a lot of people can be affected by how well the work gets done.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	15	3.3	15	3.3
2.	23	5.0	38	8.3
3.	24	5.3	62	13.6
4.	147	32.2	209	45.7
5.	248	54.3	457	100.0

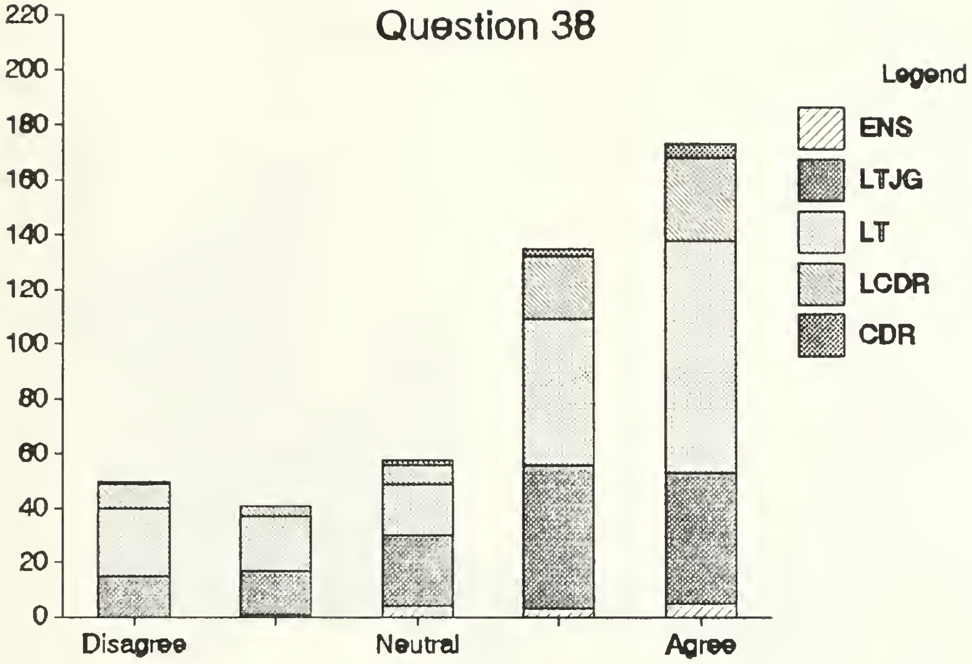
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	4.291	1.004	1.009



37. The collateral duty itself gives me considerable opportunity for independence and freedom in how I do the work.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	31	6.8	31	6.8
2.	50	10.9	81	17.7
3.	68	14.9	149	32.6
4.	170	37.2	319	69.8
5.	138	30.2	457	100.0

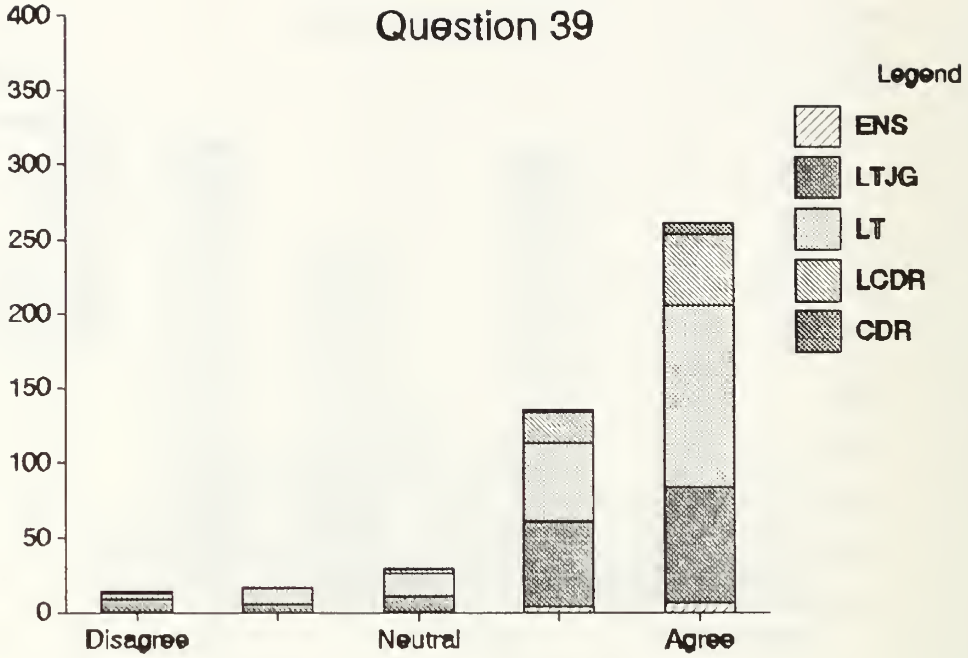
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.730	1.195	1.429



38. In general, I am satisfied with this collateral duty.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	50	10.9	50	10.9
2.	41	9.0	91	19.9
3.	58	12.7	149	32.6
4.	135	29.5	284	62.1
5.	173	37.9	457	100.0

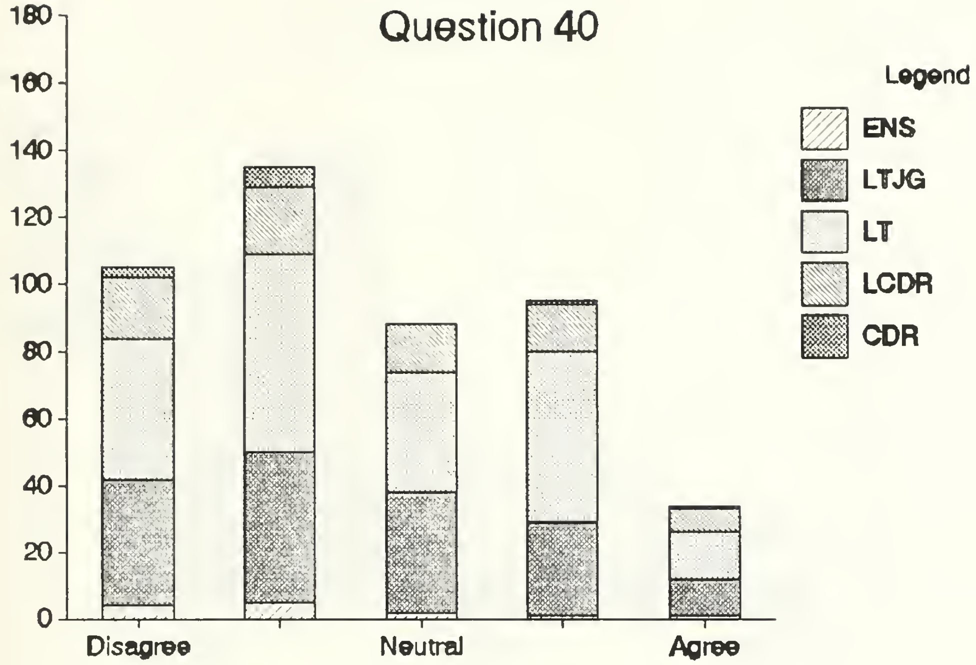
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.743	1.336	1.787



39. This collateral duty requires a lot of cooperative work with other people.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	14	3.1	14	3.1
2.	17	3.7	31	6.8
3.	30	6.6	61	13.3
4.	135	29.5	196	42.9
5.	261	57.1	457	100.0

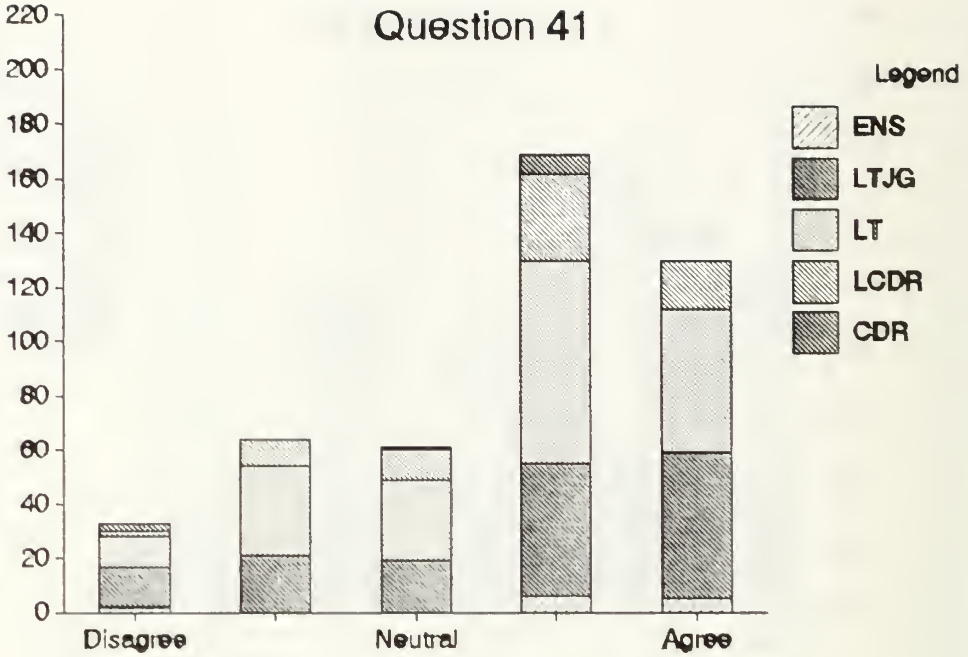
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	4.339	0.973	0.948



40. The supervisors and co-workers on this collateral duty almost never give me any feedback about how well I am doing in my collateral duty.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	105	23.0	105	23.0
2.	135	29.5	240	52.5
3.	88	19.3	328	71.8
4.	95	20.8	423	92.6
5.	34	7.4	457	100.0

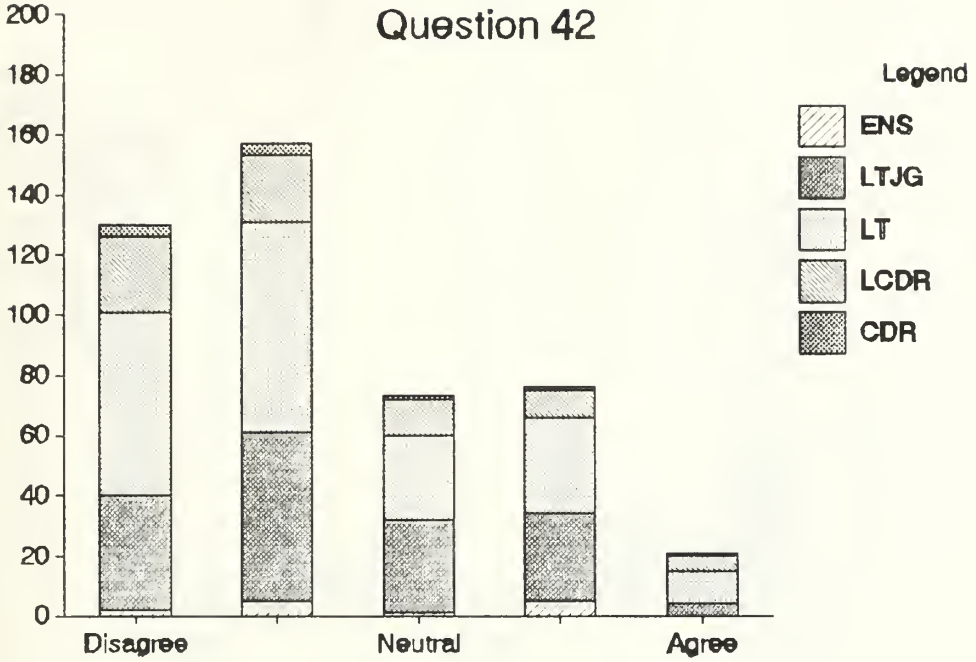
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.601	1.250	1.564



41. This collateral duty provides me the chance to completely finish the pieces of work I begin.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	33	7.2	33	7.2
2.	64	14.0	97	21.2
3.	61	13.3	158	34.6
4.	169	37.0	327	71.6
5.	130	28.4	457	100.0

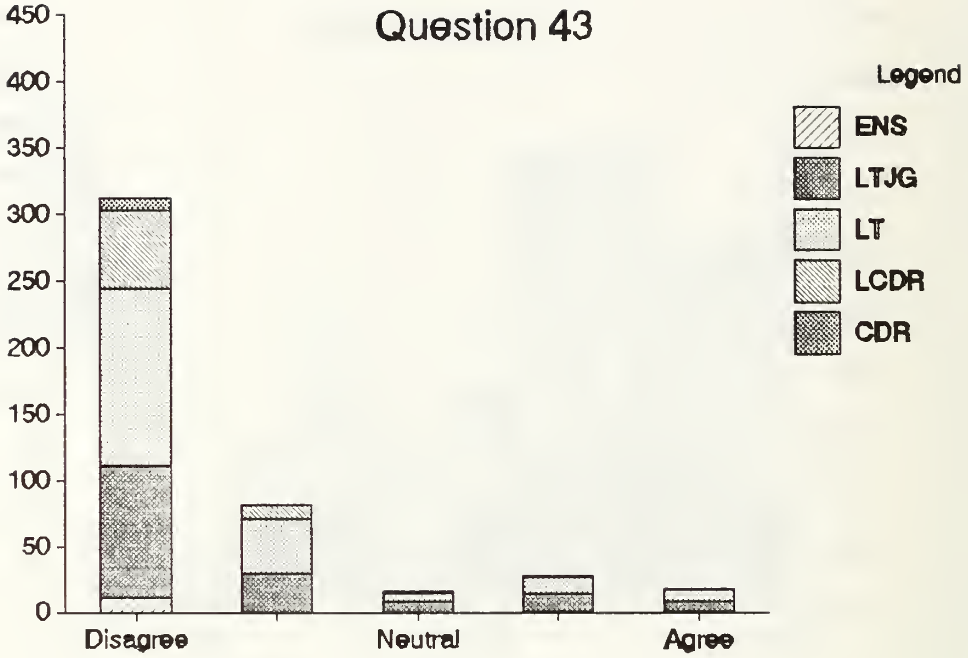
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.654	1.229	1.511



42. The collateral duty itself provides very few clues about whether or not I am performing well.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	130	28.4	130	28.4
2.	157	34.4	287	62.8
3.	73	16.0	360	78.8
4.	76	16.6	436	95.4
5.	21	4.6	457	100.0

N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.345	1.185	1.406



43. My collateral duty can be done adequately by a person working alone - without talking or checking with other people.

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                                     CUMMULATIVE     CUMMULATIVE
        FREQUENCY     PERCENT      FREQUENCY       PERCENT

 1.         313       68.5             313          68.5
 2.          82       17.9             395          86.4
 3.          16        3.5             411          89.9
 4.          28        6.1             439          96.1
 5.          18        3.9             457         100.0

     N     N MISSING      MEAN      STDDEV   VARIANCE

   457         0         1.590      1.074      1.154
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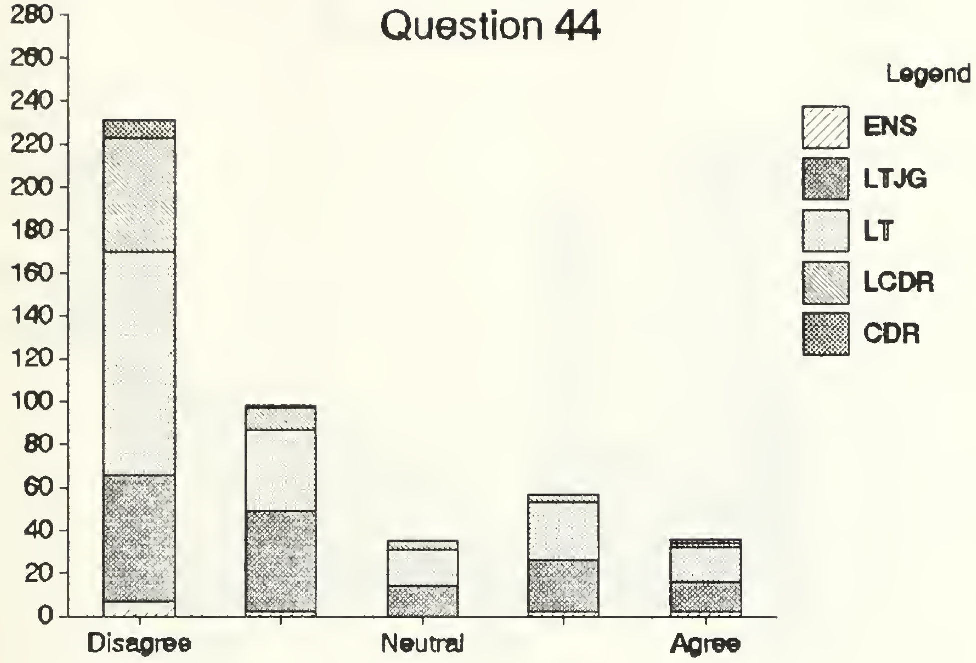
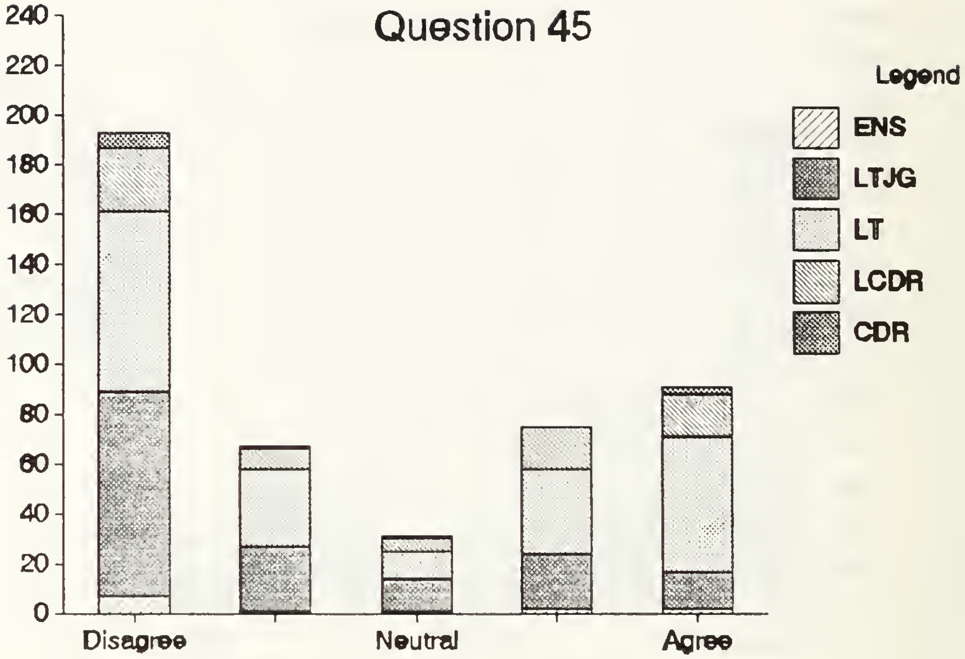


44. This collateral duty is quite simple and repetitive.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	231	50.5	231	50.5
2.	98	21.4	329	72.0
3.	35	7.7	364	79.6
4.	57	12.5	421	92.1
5.	36	7.9	457	100.0

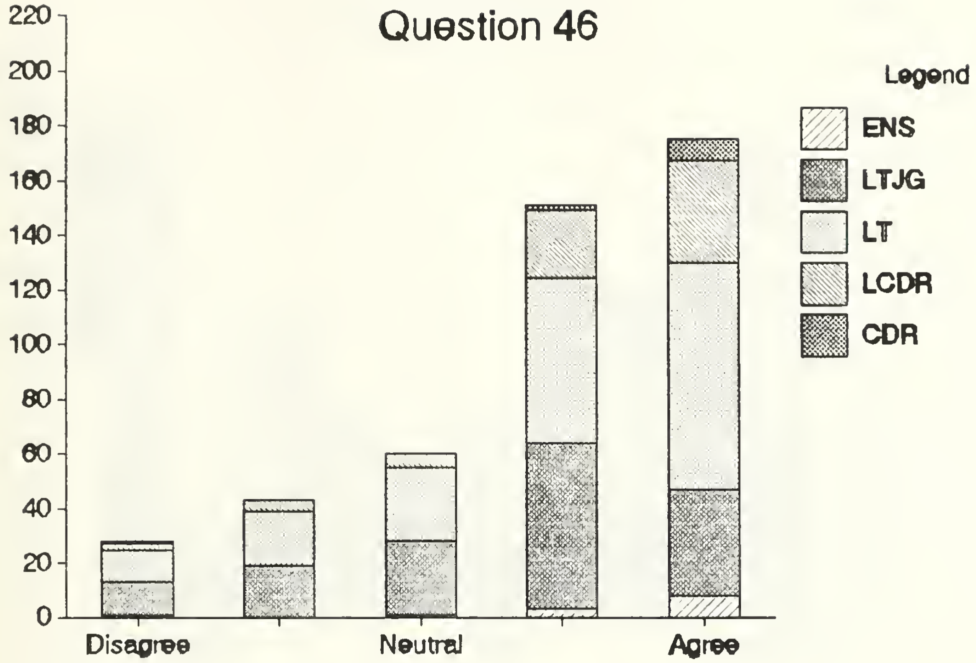
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.056	1.338	1.790



45. My collateral duty enables me to gain knowledge, skills, or abilities for my professional development as an aviator.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	193	42.2	193	42.2
2.	67	14.7	260	56.9
3.	31	6.8	291	63.7
4.	75	16.4	366	80.1
5.	91	19.9	457	100.0

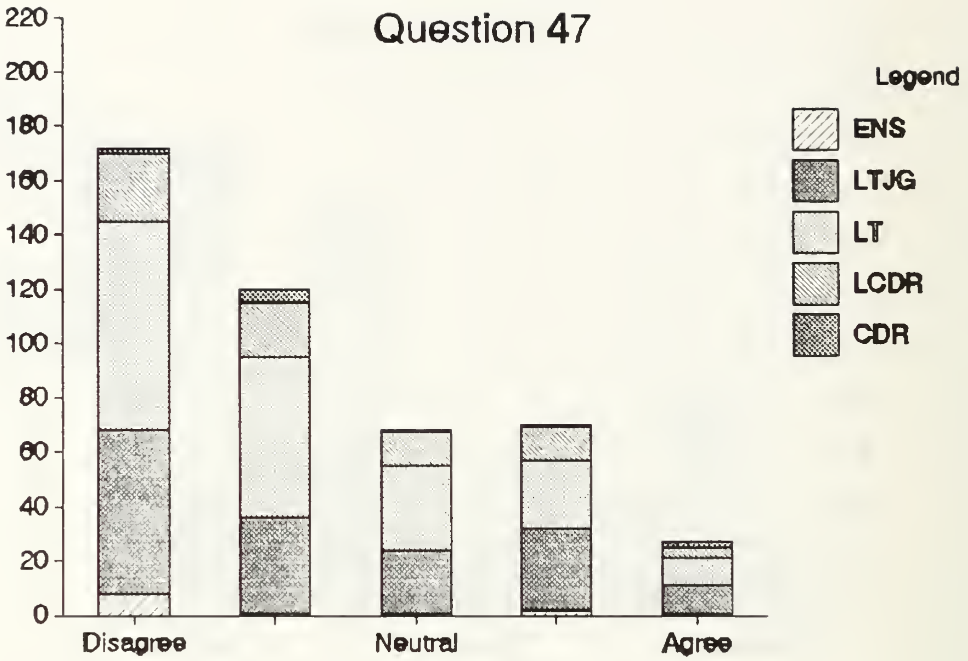
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.571	1.618	2.618



46. My collateral duty enables me to gain knowledge, skills, or abilities for my professional development as a Coast Guard officer.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	28	6.1	28	6.1
2.	43	9.4	71	15.5
3.	60	13.1	131	28.7
4.	151	33.0	282	61.7
5.	175	38.3	457	100.0

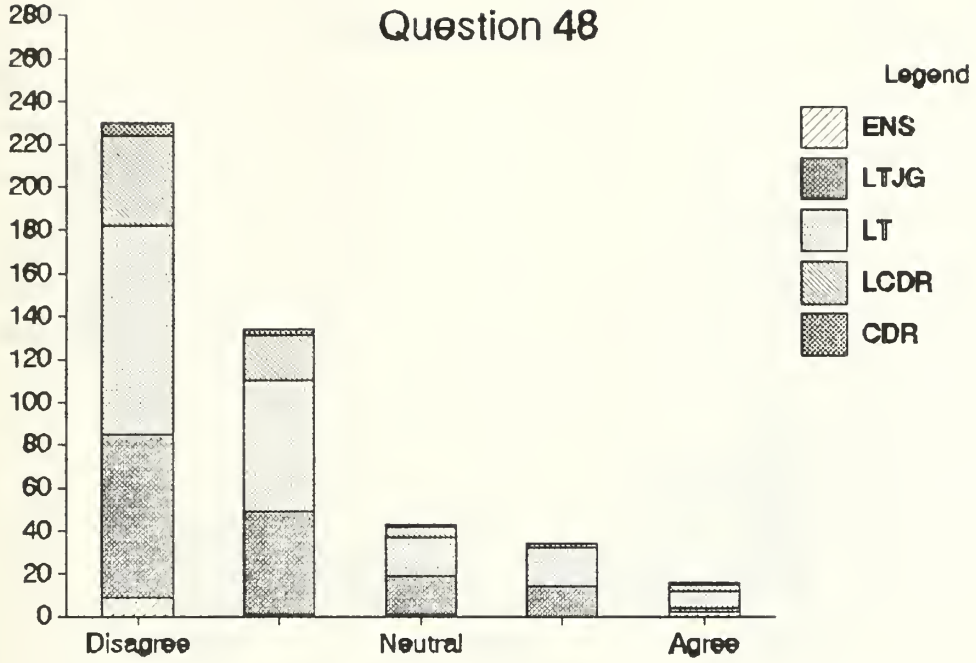
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	3.879	1.196	1.430



47. This collateral duty is arranged so that I do not have the chance to do an entire piece of work from beginning to end.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	172	37.6	172	37.6
2.	120	26.3	292	63.9
3.	68	14.9	360	78.8
4.	70	15.3	430	94.1
5.	27	5.9	457	100.0

N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.256	1.267	1.607



48. This collateral duty denies me any chance to use my personal initiative or judgement in carrying out the work.

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                                    CUMMULATIVE   CUMMULATIVE
        FREQUENCY     PERCENT       FREQUENCY     PERCENT

  1.          230     50.3                230     50.3
  2.          134     29.3                364     79.6
  3.           43      9.4                407     89.1
  4.           34      7.4                441     96.5
  5.           16      3.5                457    100.0


     N     N MISSING      MEAN      STDDEV   VARIANCE

   457         0         1.844      1.090      1.188
```
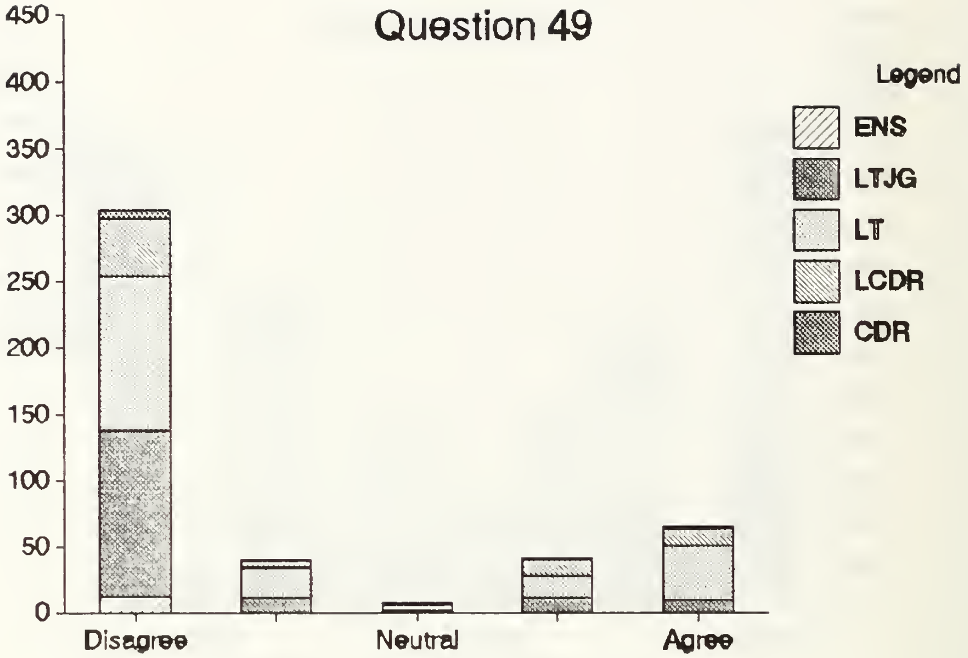
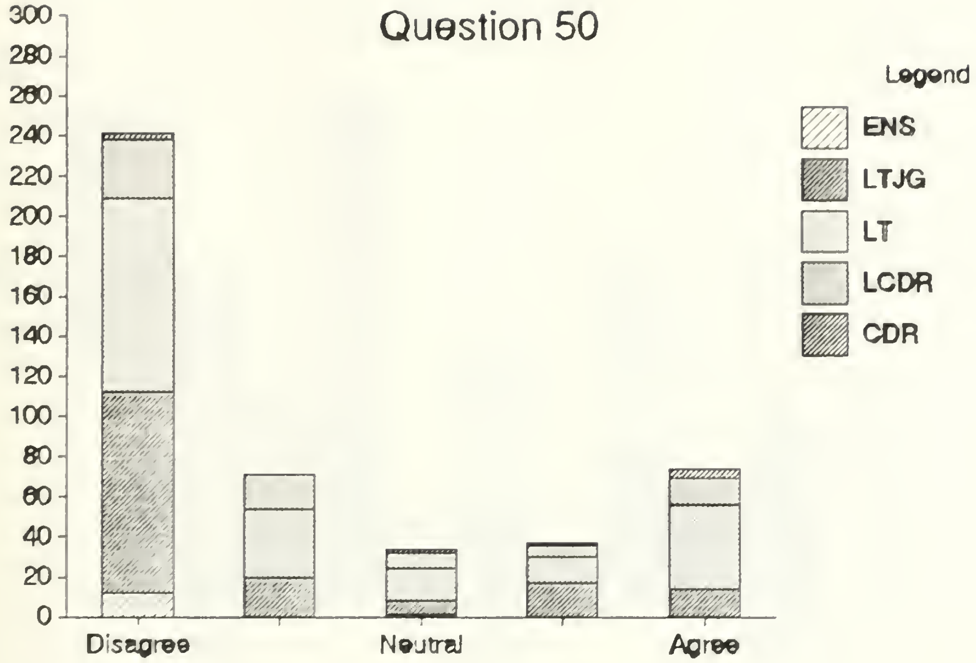



49. Only a Coast Guard aviator could properly complete my collateral duty.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	304	66.5	304	66.5
2.	40	8.8	344	75.3
3.	7	1.5	351	76.8
4.	41	9.0	392	85.8
5.	65	14.2	457	100.0

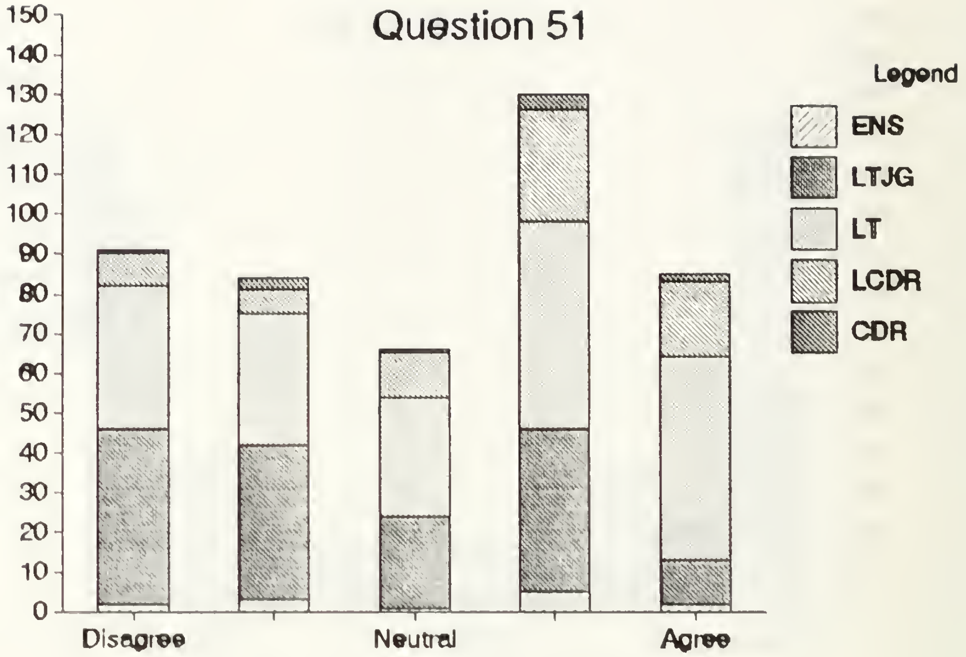
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	1.956	1.524	2.322



50. Only a Coast Guard officer could properly complete my collateral duty.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	241	52.7	241	52.7
2.	71	15.5	312	68.3
3.	34	7.4	346	75.7
4.	37	8.1	383	83.8
5.	74	16.2	457	100.0

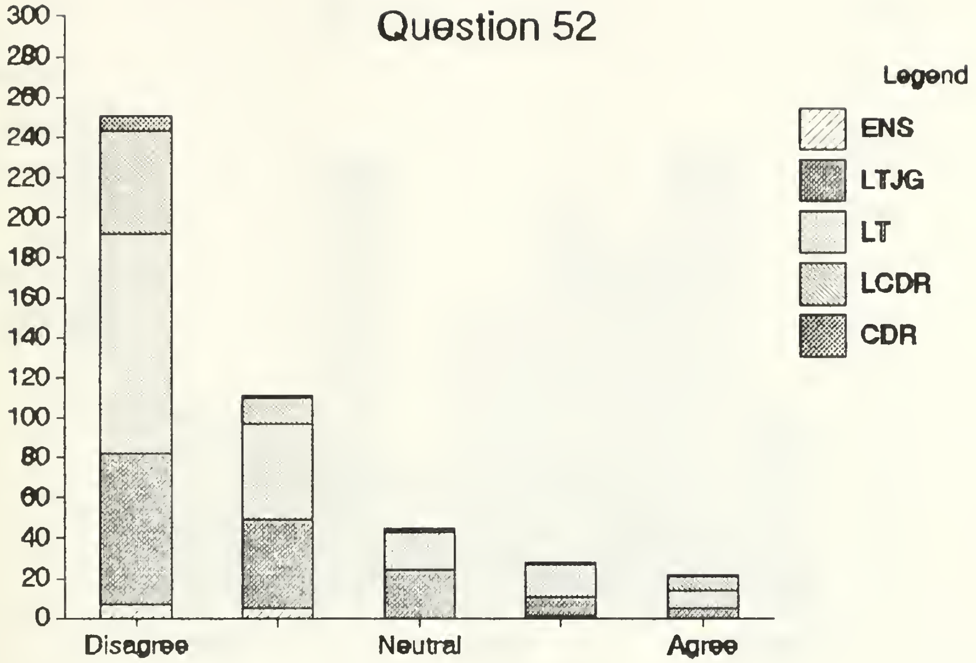
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	2.194	1.533	2.350



51. This collateral duty requires me to use a number of complex or high-level skills.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	91	20.0	91	20.0
2.	84	18.4	175	38.4
3.	66	14.5	241	52.9
4.	130	28.5	371	81.4
5.	85	18.6	456	100.0

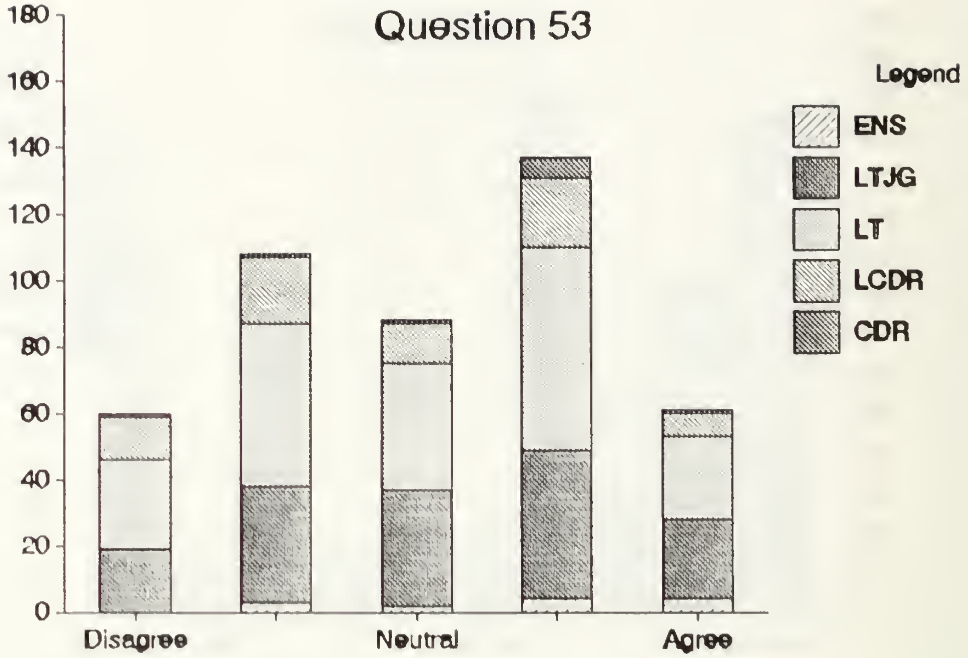
N	N MISSING	MEAN	STDDEV	VARIANCE
456	1	3.074	1.418	2.012



52. The collateral duty itself is not very significant or important in the broader scheme of things.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	251	54.9	251	54.9
2.	111	24.3	362	79.2
3.	45	9.8	407	89.1
4.	28	6.1	435	95.2
5.	22	4.8	457	100.0

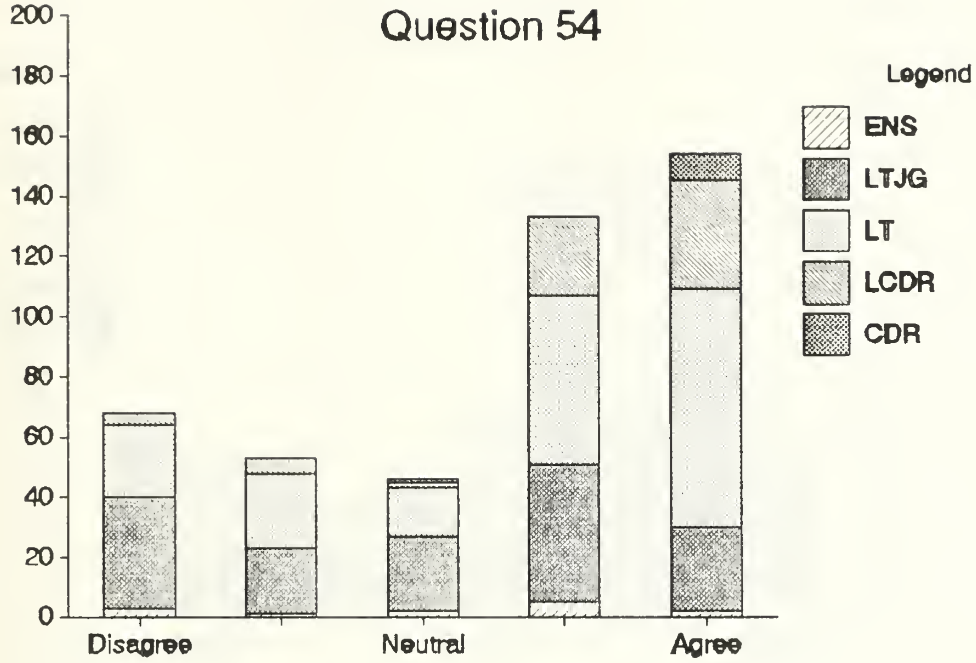
N	N MISSING	MEAN	STDDEV	VARIANCE
457	0	1.816	1.138	1.295



53. Supervisors often let me know how well they think I am performing the collateral duty.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	60	13.2	60	13.2
2.	108	23.8	168	37.0
3.	88	19.4	256	56.4
4.	137	30.2	393	86.6
5.	61	13.4	454	100.0

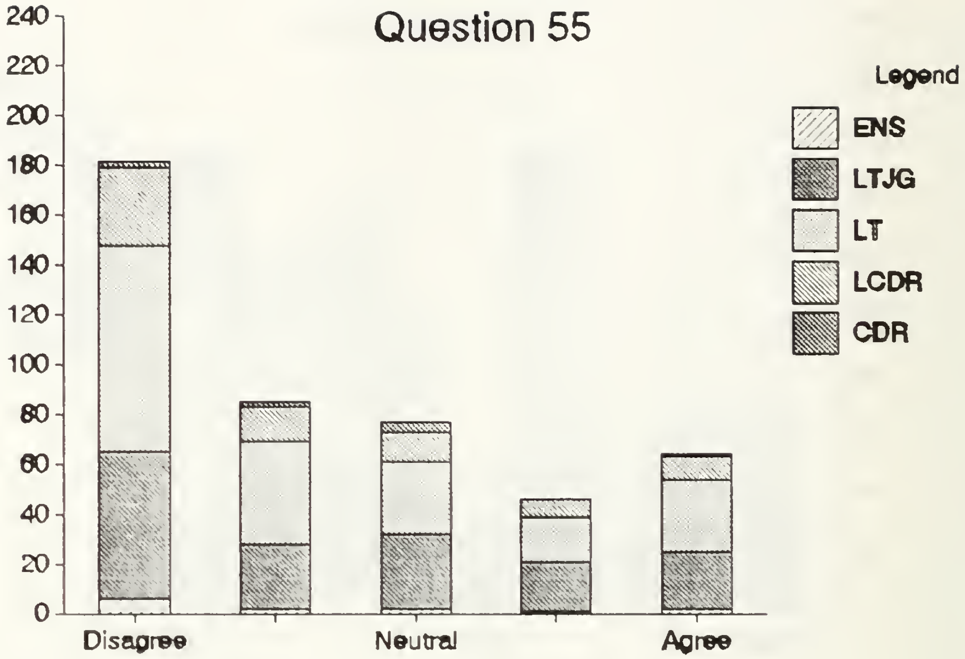
N	N MISSING	MEAN	STDDEV	VARIANCE
454	3	3.068	1.266	1.604



54. My collateral duty enables me to use my leadership skills.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	68	15.0	68	15.0
2.	53	11.7	121	26.7
3.	46	10.1	167	36.8
4.	133	29.3	300	66.1
5.	154	33.9	454	100.0

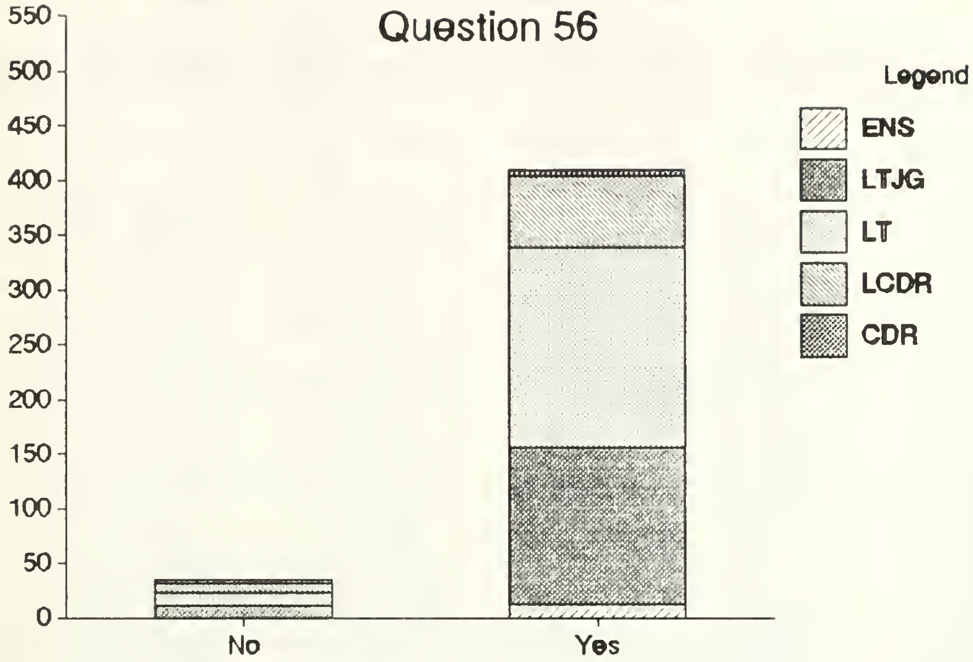
N	N MISSING	MEAN	STDDEV	VARIANCE
454	3	3.555	1.435	2.062



55. I frequently think of quitting this collateral duty and requesting another one.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	182	40.1	182	40.1
2.	85	18.7	267	58.8
3.	77	17.0	344	75.8
4.	47	10.4	391	86.1
5.	63	13.9	454	100.0

N	N MISSING	MEAN	STDDEV	VARIANCE
454	3	2.392	1.443	2.084



56. I would be interested in the results of this research project.

	FREQUENCY	PERCENT	CUMMULATIVE FREQUENCY	CUMMULATIVE PERCENT
1.	35	7.9	35	7.9
2.	403	90.6	438	98.4
5.	7	1.6	445	100.0

N	N MISSING	MEAN	STDDEV	VARIANCE
445	12	1.968	0.468	0.219

APPENDIX C

DESCRIPTIVE STATISTICS AND CORRELATION TABLE OF VARIABLES

VARIABLE	N	N MISS	MEAN	STD DEV
RANK	457	0	2.805	0.824
SOURCE	453	4	2.885	1.423
AGE	457	0	3.028	1.005
QUAL	456	1	2.923	1.235
RETIRE	457	0	4.345	0.947
NO_CD	457	0	2.536	1.363
OERBAL	456	1	1.969	0.822
CDINFL	457	0	3.853	0.992
CDTIME	457	0	3.166	1.247
CGASIZE	457	0	3.179	1.454
LEVEL	455	2	3.063	1.544
CDASSIGN	456	1	3.175	1.231
PRO_AV	457	0	2.571	1.618
PRO_OFF	457	0	3.879	1.196
AVKSA	457	0	1.956	1.524
OFFKSA	457	0	2.194	1.533
VARIETY	456	1	3.595	1.064
TASKID	457	0	3.632	1.017
AFEEDBAK	454	3	3.118	1.015
TASKSIG	457	0	4.147	0.904
DEALOTH	457	0	4.323	0.813
AUTONOMY	457	0	3.827	0.937
JFEEDBAK	457	0	3.419	0.987
COWORK	456	1	4.116	0.718
SUPER	457	0	3.764	1.008
LEAD	454	3	3.490	1.334
CDSATIS	454	3	3.676	1.253
CARSATIS	457	0	3.967	0.837
OFF_AV	457	0	2.821	1.077

CORRELATION TABLE OF RESEARCH VARIABLES

	ID	RANK	SOURCE	AGE	QUAL	RETIRE	NO_CD	
ID	1	0.07975	0.00957	0.0508	0.04746	-0.06379	0.00189	(r value)
	0	0.0886	0.8391	0.2785	0.3118	0.1734	0.9679	(α)
	457	457	453	457	456	457	457	(N)
RANK	0.07975	1	-0.15302	0.62098	0.59563	0.18753	-0.17232	
	0.0886	0	0.0011	0.0001	0.0001	0.0001	0.0002	
	457	457	453	457	456	457	457	
SOURCE	0.00957	-0.15302	1	0.20246	-0.07387	-0.0167	-0.00051	
	0.8391	0.0011	0	0.0001	0.1168	0.723	0.9913	
	453	453	453	453	452	453	453	
AGE	0.0508	0.62098	0.20246	1	0.45974	0.33047	-0.18879	
	0.2785	0.0001	0.0001	0	0.0001	0.0001	0.0001	
	457	457	453	457	456	457	457	
QUAL	0.04746	0.59563	-0.07387	0.45974	1	0.13531	-0.17104	
	0.3118	0.0001	0.1168	0.0001	0	0.0038	0.0002	
	456	456	452	456	456	456	456	
RETIRE	-0.06379	0.18753	-0.0167	0.33047	0.13531	1	-0.15568	
	0.1734	0.0001	0.723	0.0001	0.0038	0	0.0008	
	457	457	453	457	456	457	457	
NO_CD	0.00189	-0.17232	-0.00051	-0.18879	-0.17104	-0.15568	1	
	0.9679	0.0002	0.9913	0.0001	0.0002	0.0008	0	
	457	457	453	457	456	457	457	
OERBAL	-0.00535	0.05287	-0.08041	0.03592	0.02589	0.20585	-0.11063	
	0.9093	0.2599	0.0877	0.4441	0.5817	0.0001	0.0181	
	456	456	452	456	455	456	456	
CDINFL	-0.04092	0.13662	0.01696	0.08333	0.09823	-0.20717	0.02418	
	0.3828	0.0034	0.7189	0.0751	0.036	0.0001	0.6062	
	457	457	453	457	456	457	457	
CDTIME	-0.03913	0.18093	0.04339	0.14667	0.2363	0.0366	-0.06157	
	0.404	0.0001	0.3569	0.0017	0.0001	0.435	0.1889	
	457	457	453	457	456	457	457	
CGASIZE	0.15261	0.09688	0.01898	0.10298	-0.00444	-0.00215	-0.28518	
	0.0011	0.0384	0.687	0.0277	0.9247	0.9635	0.0001	
	457	457	453	457	456	457	457	
LEVEL	-0.02414	-0.53999	0.0233	-0.36036	-0.43249	-0.14728	0.00765	
	0.6075	0.0001	0.6217	0.0001	0.0001	0.0016	0.8707	
	455	455	451	455	454	455	455	
CDASSIGN	0.04566	0.08787	-0.10269	-0.01857	0.12881	0.1157	-0.0958	
	0.3306	0.0608	0.029	0.6925	0.0059	0.0134	0.0409	
	456	456	452	456	455	456	456	
PRO_AV	0.01907	0.15596	-0.10152	0.0655	0.2563	0.06117	-0.19177	
	0.6844	0.0008	0.0307	0.1621	0.0001	0.1918	0.0001	
	457	457	453	457	456	457	457	
PRO_OFF	-0.00262	0.15861	-0.08688	0.09589	0.14846	0.1974	-0.14458	
	0.9554	0.0007	0.0647	0.0405	0.0015	0.0001	0.0019	
	457	457	453	457	456	457	457	
AVKSA	-0.00979	0.19924	-0.10998	0.05951	0.28763	0.05758	-0.1491	
	0.8346	0.0001	0.0192	0.2041	0.0001	0.2192	0.0014	
	457	457	453	457	456	457	457	
OFFKSA	-0.03664	0.20541	-0.12701	0.01205	0.12154	0.11056	-0.07314	
	0.4345	0.0001	0.0068	0.7972	0.0094	0.0181	0.1184	
	457	457	453	457	456	457	457	

```
              OERBAL    CDINFL    CDTIME    CGASIZE   LEVEL     CDASSIGN PRO_AV

ID          -0.00535  -0.04092  -0.03913   0.15261  -0.02414   0.04566   0.01907
              0.9093    0.3828     0.404    0.0011    0.6075    0.3306    0.6844
                 456       457       457       457       455       456       457

RANK         0.05287   0.13662   0.18093   0.09688  -0.53999   0.08787   0.15596
              0.2599    0.0034    0.0001    0.0384    0.0001    0.0608    0.0008
                 456       457       457       457       455       456       457

SOURCE      -0.08041   0.01696   0.04339   0.01898    0.0233  -0.10269  -0.10152
              0.0877    0.7189    0.3569     0.687    0.6217     0.029    0.0307
                 452       453       453       453       451       452       453

AGE          0.03592   0.08333   0.14667   0.10298  -0.36036  -0.01857    0.0655
              0.4441    0.0751    0.0017    0.0277    0.0001    0.6925    0.1621
                 456       457       457       457       455       456       457

QUAL         0.02589   0.09823    0.2363  -0.00444  -0.43249   0.12881    0.2563
              0.5817     0.036    0.0001    0.9247    0.0001    0.0059    0.0001
                 455       456       456       456       454       455       456

RETIRE       0.20585  -0.20717    0.0366  -0.00215  -0.14728    0.1157   0.06117
              0.0001    0.0001     0.435    0.9635    0.0016    0.0134    0.1918
                 456       457       457       457       455       456       457

NO_CD       -0.11063   0.02418  -0.06157  -0.28518   0.00765   -0.0958  -0.19177
              0.0181    0.6062    0.1889    0.0001    0.8707    0.0409    0.0001
                 456       457       457       457       455       456       457

OERBAL             1  -0.01623   0.01374   0.04683  -0.01576   0.19275   0.13056
                   0    0.7297    0.7699    0.3183    0.7377    0.0001    0.0052
                 456       456       456       456       454       455       456

CDINFL      -0.01623         1   0.12426  -0.04249  -0.12156  -0.02559   0.09049
              0.7297         0    0.0078    0.3648    0.0094    0.5857    0.0532
                 456       457       457       457       455       456       457

CDTIME       0.01374   0.12426         1  -0.00439   -0.1545   0.07128   0.14408
              0.7699    0.0078         0    0.9254    0.0009    0.1285     0.002
                 456       457       457       457       455       456       457

CGASIZE      0.04683  -0.04249  -0.00439         1   0.26044   0.04823  -0.01568
              0.3183    0.3648    0.9254         0    0.0001    0.3041    0.7382
                 456       457       457       457       455       456       457

LEVEL       -0.01576  -0.12156   -0.1545   0.26044         1  -0.10131  -0.12576
              0.7377    0.0094    0.0009    0.0001         0    0.0309    0.0072
                 454       455       455       455       455       454       455

CDASSIGN     0.19275  -0.02559   0.07128   0.04823  -0.10131         1   0.33585
              0.0001    0.5857    0.1285    0.3041    0.0309         0    0.0001
                 455       456       456       456       454       456       456

PRO_AV       0.13056   0.09049   0.14408  -0.01568  -0.12576   0.33585         1
              0.0052    0.0532     0.002    0.7382    0.0072    0.0001         0
                 456       457       457       457       455       456       457

PRO_OFF      0.17723   0.02944   0.00904  -0.06065  -0.30318     0.322     0.286
              0.0001    0.5302    0.8472    0.1956    0.0001    0.0001    0.0001
                 456       457       457       457       455       456       457

AVKSA        0.06211    0.0175   0.13651   0.05102  -0.08312   0.27541   0.60597
              0.1855    0.7091    0.0035    0.2764    0.0765    0.0001    0.0001
                 456       457       457       457       455       456       457

OFFKSA       0.13365    0.0361   0.08969   0.00691  -0.14034    0.2672   0.27863
              0.0042    0.4413    0.0554    0.8828    0.0027    0.0001    0.0001
                 456       457       457       457       455       456       457
```

```
          PRO_OFF  AVKSA    OFFKSA   INTEREST VARIETY  TASKID   AFEEDBAK

ID        -0.00262 -0.00979 -0.03664   0.0726   0.0013  0.03109  0.04564
            0.9554   0.8346   0.4345   0.1262   0.9779   0.5073   0.3319
               457      457      457      445      456      457      454

RANK       0.15861  0.19924  0.20541 -0.07421  0.20962 -0.04286 -0.04907
            0.0007   0.0001   0.0001    0.118   0.0001   0.3607   0.2968
               457      457      457      445      456      457      454

SOURCE    -0.08688 -0.10998 -0.12701 -0.02933 -0.12026 -0.09876 -0.06479
            0.0647   0.0192   0.0068    0.539   0.0105   0.0356     0.17
               453      453      453      441      452      453      450

AGE        0.09589  0.05951  0.01205 -0.13159  0.12735 -0.03479 -0.09651
            0.0405   0.2041   0.7972   0.0054   0.0065   0.4582   0.0398
               457      457      457      445      456      457      454

QUAL       0.14846  0.28763  0.12154 -0.03488  0.27286  0.07438  0.00134
            0.0015   0.0001   0.0094   0.4634   0.0001   0.1127   0.9773
               456      456      456      444      455      456      453

RETIRE      0.1974  0.05758  0.11056 -0.01557  0.18858  0.07905  0.08086
            0.0001   0.2192   0.0181   0.7432   0.0001   0.0914   0.0853
               457      457      457      445      456      457      454

NO_CD     -0.14458  -0.1491 -0.07314  0.00226  -0.1294 -0.15166 -0.06153
            0.0019   0.0014   0.1184    0.962   0.0057   0.0011   0.1907
               457      457      457      445      456      457      454

OERBAL     0.17723  0.06211  0.13365 -0.04353  0.10659  0.26141  0.27955
            0.0001   0.1855   0.0042   0.3602    0.023   0.0001   0.0001
               456      456      456      444      455      456      453

CDINFL     0.02944   0.0175   0.0361 -0.01512   0.1418  0.02324 -0.05405
            0.5302   0.7091   0.4413   0.7504   0.0024   0.6202   0.2504
               457      457      457      445      456      457      454

CDTIME     0.00904  0.13651  0.08969 -0.07162  0.10604  0.06499 -0.00973
            0.8472   0.0035   0.0554   0.1314   0.0235   0.1655   0.8362
               457      457      457      445      456      457      454

CGASIZE   -0.06065  0.05102  0.00691 -0.01457 -0.03115  0.04071 -0.02248
            0.1956   0.2764   0.8828   0.7592    0.507   0.3853   0.6328
               457      457      457      445      456      457      454

LEVEL     -0.30318 -0.08312 -0.14034  0.06894 -0.33581  0.04634 -0.06601
            0.0001   0.0765   0.0027   0.1474   0.0001    0.324   0.1612
               455      455      455      443      454      455      452

CDASSIGN     0.322  0.27541   0.2672 -0.01749  0.39774  0.25378  0.26636
            0.0001   0.0001   0.0001   0.7132   0.0001   0.0001   0.0001
               456      456      456      444      455      456      453

PRO_AV       0.286  0.60597  0.27863 -0.05009  0.40912  0.21972  0.24491
            0.0001   0.0001   0.0001   0.2917   0.0001   0.0001   0.0001
               457      457      457      445      456      457      454

PRO_OFF          1  0.14026   0.2544  0.02091  0.57997  0.30175  0.34278
                 0   0.0027   0.0001   0.6599   0.0001   0.0001   0.0001
               457      457      457      445      456      457      454

AVKSA      0.14026        1  0.39507  0.00813  0.32946  0.11076  0.10884
            0.0027        0   0.0001   0.8642   0.0001   0.0179   0.0204
               457      457      457      445      456      457      454

OFFKSA      0.2544  0.39507        1 -0.00316  0.37669  0.10834  0.21202
            0.0001   0.0001        0    0.947   0.0001   0.0205   0.0001
               457      457      457      445      456      457      454
          TASKSIG  DEALOTH  AUTONOMY JFEEDBAK COWORK   SUPER    LEAD

ID        0.00483   0.0175  0.03284  0.07495  0.08417  0.08123  0.03757
            0.918    0.709   0.4837   0.1096   0.0726   0.0828   0.4245
              457      457      457      457      456      457      454

RANK      0.07679  0.17471 -0.00185  0.08798  0.04565 -0.04409  0.31784
           0.1011   0.0002   0.9685   0.0602   0.3307    0.347   0.0001
              457      457      457      457      456      457      454

SOURCE   -0.12471 -0.09352 -0.03558 -0.10972 -0.12756 -0.05655 -0.11329
           0.0079   0.0467   0.4501   0.0195   0.0066   0.2297   0.0162
              453      453      453      453      452      453      450

AGE       0.00744  0.14068 -0.00177  0.04244  0.02547 -0.03146  0.19477
            0.874   0.0026   0.9698   0.3654   0.5875   0.5023   0.0001
              457      457      457      457      456      457      454

QUAL      0.15346  0.22936  0.08505  0.11505  0.10594   0.0035  0.32305
            0.001   0.0001   0.0696    0.014   0.0238   0.9406   0.0001
              456      456      456      456      455      456      453

RETIRE    0.18088  0.15439  0.21436  0.08216  0.13845  0.16687  0.17633
           0.0001   0.0009   0.0001   0.0794   0.0031   0.0003   0.0002
              457      457      457      457      456      457      454

NO_CD    -0.12341 -0.08137 -0.22779 -0.15644 -0.18821 -0.11993 -0.14804
           0.0083   0.0823   0.0001   0.0008   0.0001   0.0103   0.0016
              457      457      457      457      456      457      454

OERBAL    0.19299  0.13663  0.29552  0.24853  0.16155  0.28312  0.20311
           0.0001   0.0035   0.0001   0.0001   0.0005   0.0001   0.0001
              456      456      456      456      455      456      453

CDINFL    0.05829  0.13029  0.01445  0.05614  0.00705 -0.09669  0.09002
           0.2136   0.0053    0.758    0.231   0.8806   0.0388   0.0553
              457      457      457      457      456      457      454

CDTIME     0.0605  0.05497  0.06077  0.10938  0.05042 -0.05183  0.07251
           0.1967   0.2408   0.1947   0.0193   0.2826   0.2688   0.1229
              457      457      457      457      456      457      454

CGASIZE  -0.02734 -0.00215 -0.01642  0.02687  0.07677   0.0264 -0.04624
           0.5599   0.9634   0.7263   0.5667   0.1016   0.5735   0.3256
              457      457      457      457      456      457      454

LEVEL    -0.17451 -0.24626 -0.11082 -0.13924 -0.12519 -0.07923 -0.48742
           0.0002   0.0001    0.018   0.0029   0.0076   0.0914   0.0001
              455      455      455      455      454      455      452

CDASSIGN  0.33268  0.25931  0.35222  0.34128  0.29739  0.27491  0.29014
           0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
              456      456      456      456      455      456      453

PRO_AV    0.34129  0.25981  0.20798  0.31306  0.28121  0.18047  0.28284
           0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
              457      457      457      457      456      457      454

PRO_OFF   0.45067  0.45086  0.34118  0.47089  0.44911  0.37198  0.50632
           0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
              457      457      457      457      456      457      454

AVKSA     0.26812  0.24366  0.15683  0.18603  0.17035   0.0629  0.17901
           0.0001   0.0001   0.0008   0.0001   0.0003   0.1795   0.0001
              457      457      457      457      456      457      454

OFFKSA    0.29912  0.27642  0.12454   0.1868  0.19318  0.18053  0.23372
           0.0001   0.0001   0.0077   0.0001   0.0001   0.0001   0.0001
              457      457      457      457      456      457      454
```

```
         CDSATIS  CARSATIS OFF_AV

ID        0.02908  0.00443  0.05604
           0.5365   0.9247   0.2318
              454      457      457

RANK      0.05162 -0.01565 -0.04933
           0.2724   0.7387   0.2927
              454      457      457

SOURCE   -0.14022 -0.09539 -0.10678
           0.0029   0.0424   0.0230
              450      453      453

AGE       0.00393 -0.06666 -0.05603
           0.9334   0.1548   0.2319
              454      457      457

QUAL      0.16588   0.0518 -0.06833
           0.0004   0.2697   0.1451
              453      456      456

RETIRE    0.22773  0.54522  0.11032
           0.0001   0.0001   0.0183
              454      457      457

NO_CD    -0.20774 -0.21321  0.07757
           0.0001   0.0001   0.0977
              454      457      457

OERBAL    0.22719  0.31283  0.10543
           0.0001   0.0001   0.0243
              453      456      456

CDINFL   -0.05437 -0.18926 -0.00136
           0.2476   0.0001   0.9769
              454      457      457

CDTIME   -0.10115   0.0273 -0.10305
           0.0312   0.5606   0.0276
              454      457      457

CGASIZE  -0.00474  0.01205 -0.01956
           0.9198   0.7973   0.6767
              454      457      457

LEVEL    -0.16595 -0.05953 -0.04604
           0.0004    0.205   0.3271
              452      455      455

CDASSIGN  0.47681    0.221  0.05665
           0.0001   0.0001   0.2273
              453      456      456

PRO_AV     0.4066  0.19845  0.00356
           0.0001   0.0001   0.9395
              454      457      457

PRO_OFF   0.49791  0.29941  0.11765
           0.0001   0.0001   0.0118
              454      457      457

AVKSA     0.28096  0.18109  0.01123
           0.0001   0.0001   0.8107
              454      457      457

OFFKSA    0.23888  0.19127  0.13274
           0.0001   0.0001   0.0045
              454      457      457
```

```
                  ID     RANK   SOURCE      AGE     QUAL   RETIRE    NO_CD

INTEREST     0.0726 -0.07421 -0.02933 -0.13159 -0.03488 -0.01557  0.00226
             0.1262    0.118    0.539   0.0054   0.4634   0.7432    0.962
                445      445      441      445      444      445      445

VARIETY      0.0013  0.20962 -0.12026  0.12735  0.27286  0.18858  -0.1294
             0.9779   0.0001   0.0105   0.0065   0.0001   0.0001   0.0057
                456      456      452      456      455      456      456

TASKID      0.03109 -0.04286 -0.09876 -0.03479  0.07438  0.07905 -0.15166
             0.5073   0.3607   0.0356   0.4582   0.1127   0.0914   0.0011
                457      457      453      457      456      457      457

AFEEDBAK    0.04564 -0.04907 -0.06479 -0.09651  0.00134  0.08086 -0.06153
             0.3319   0.2968     0.17   0.0398   0.9773   0.0853   0.1907
                454      454      450      454      453      454      454

TASKSIG     0.00483  0.07679 -0.12471  0.00744  0.15346  0.18088 -0.12341
              0.918   0.1011   0.0079    0.874    0.001   0.0001   0.0083
                457      457      453      457      456      457      457

DEALOTH      0.0175  0.17471 -0.09352  0.14068  0.22936  0.15439 -0.08137
              0.709   0.0002   0.0467   0.0026   0.0001   0.0009   0.0823
                457      457      453      457      456      457      457

AUTONOMY    0.03284 -0.00185 -0.03558 -0.00177  0.08505  0.21436 -0.22779
             0.4837   0.9685   0.4501   0.9698   0.0696   0.0001   0.0001
                457      457      453      457      456      457      457

JFEEDBAK    0.07495  0.08798 -0.10972  0.04244  0.11505  0.08216 -0.15644
             0.1096   0.0602   0.0195   0.3654    0.014   0.0794   0.0008
                457      457      453      457      456      457      457

COWORK      0.08417  0.04565 -0.12756  0.02547  0.10594  0.13845 -0.18821
             0.0726   0.3307   0.0066   0.5875   0.0238   0.0031   0.0001
                456      456      452      456      455      456      456

SUPER       0.08123 -0.04409 -0.05655 -0.03146   0.0035  0.16687 -0.11993
             0.0828    0.347   0.2297   0.5023   0.9406   0.0003   0.0103
                457      457      453      457      456      457      457

LEAD        0.03757  0.31784 -0.11329  0.19477  0.32305  0.17633 -0.14804
             0.4245   0.0001   0.0162   0.0001   0.0001   0.0002   0.0016
                454      454      450      454      453      454      454

CDSATIS     0.02908  0.05162 -0.14022  0.00393  0.16588  0.22773 -0.20774
             0.5365   0.2724   0.0029   0.9334   0.0004   0.0001   0.0001
                454      454      450      454      453      454      454

CARSATIS    0.00443 -0.01565 -0.09539 -0.06666   0.0518  0.54522 -0.21321
             0.9247   0.7387   0.0424   0.1548   0.2697   0.0001   0.0001
                457      457      453      457      456      457      457

OFF_AV      0.05604 -0.04933 -0.10678 -0.05603 -0.06833  0.11032  0.07757
             0.2318   0.2927   0.0230   0.2319   0.1451   0.0183   0.0977
                457      457      453      457      456      457      457
```

```
            OERBAL    CDINFL    CDTIME  CGASIZE     LEVEL CDASSIGN    PRO_AV

INTEREST -0.04353 -0.01512 -0.07162 -0.01457  0.06894 -0.01749 -0.05009
           0.3602   0.7504   0.1314   0.7592   0.1474   0.7132   0.2917
              444      445      445      445      443      444      445

VARIETY   0.10659   0.1418  0.10604 -0.03115 -0.33581  0.39774  0.40912
            0.023   0.0024   0.0235    0.507   0.0001   0.0001   0.0001
              455      456      456      456      454      455      456

TASKID    0.26141  0.02324  0.06499  0.04071  0.04634  0.25378  0.21972
           0.0001   0.6202   0.1655   0.3853    0.324   0.0001   0.0001
              456      457      457      457      455      456      457

AFEEDBAK  0.27955 -0.05405 -0.00973 -0.02248 -0.06601  0.26636  0.24491
           0.0001   0.2504   0.8362   0.6328   0.1612   0.0001   0.0001
              453      454      454      454      452      453      454

TASKSIG   0.19299  0.05829   0.0605 -0.02734 -0.17451  0.33268  0.34129
           0.0001   0.2136   0.1967   0.5599   0.0002   0.0001   0.0001
              456      457      457      457      455      456      457

DEALOTH   0.13663  0.13029  0.05497 -0.00215 -0.24626  0.25931  0.25981
           0.0035   0.0053   0.2408   0.9634   0.0001   0.0001   0.0001
              456      457      457      457      455      456      457

AUTONOMY  0.29552  0.01445  0.06077 -0.01642 -0.11082  0.35222  0.20798
           0.0001    0.758   0.1947   0.7263    0.018   0.0001   0.0001
              456      457      457      457      455      456      457

JFEEDBAK  0.24853  0.05614  0.10938  0.02687 -0.13924  0.34128  0.31306
           0.0001    0.231   0.0193   0.5667   0.0029   0.0001   0.0001
              456      457      457      457      455      456      457

COWORK    0.16155  0.00705  0.05042  0.07677 -0.12519  0.29739  0.28121
           0.0005   0.8806   0.2826   0.1016   0.0076   0.0001   0.0001
              455      456      456      456      454      455      456

SUPER     0.28312 -0.09669 -0.05183   0.0264 -0.07923  0.27491  0.18047
           0.0001   0.0388   0.2688   0.5735   0.0914   0.0001   0.0001
              456      457      457      457      455      456      457

LEAD      0.20311  0.09002  0.07251 -0.04624 -0.48742  0.29014  0.28284
           0.0001   0.0553   0.1229   0.3256   0.0001   0.0001   0.0001
              453      454      454      454      452      453      454

CDSATIS   0.22719 -0.05437 -0.10115 -0.00474 -0.16595  0.47681   0.4066
           0.0001   0.2476   0.0312   0.9198   0.0004   0.0001   0.0001
              453      454      454      454      452      453      454

CARSATIS  0.31283 -0.18926   0.0273  0.01205 -0.05953    0.221  0.19845
           0.0001   0.0001   0.5606   0.7973    0.205   0.0001   0.0001
              456      457      457      457      455      456      457

OFF_AV    0.10543  0.06969  0.00594 -0.17108 -0.04604  0.05565  0.00356
           0.0243   0.1369   0.8993   0.0002   0.3271   0.2273   0.9395
              456      457      457      457      455      456      457
           PRO_OFF     AVKSA    OFFKSA INTEREST   VARIETY    TASKID AFEEDBAK

INTEREST   0.02091   0.00813  -0.00316        1    0.0018   0.00009  0.04418
            0.6599    0.8642     0.947        0    0.9697    0.9985   0.3524
               445       445       445      445       444       445      445

VARIETY    0.57997   0.32946   0.37669   0.0018         1   0.30475  0.33634
            0.0001    0.0001    0.0001   0.9697         0    0.0001   0.0001
               456       456       456      444       456       456      453

TASKID     0.30175   0.11076   0.10834  0.00009   0.30475         1  0.28785
            0.0001    0.0179    0.0205   0.9985    0.0001         0   0.0001
               457       457       457      445       456       457      454

AFEEDBAK   0.34278   0.10884   0.21202  0.04418   0.33634   0.28785        1
            0.0001    0.0204    0.0001   0.3524    0.0001    0.0001        0
               454       454       454      445       453       454      454

TASKSIG    0.45067   0.26812   0.29912   0.0446    0.5679   0.35008  0.28504
            0.0001    0.0001    0.0001   0.3479    0.0001    0.0001   0.0001
               457       457       457      445       456       457      454

DEALOTH    0.45086   0.24366   0.27642  0.08228   0.59883   0.21648  0.28725
            0.0001    0.0001    0.0001   0.0829    0.0001    0.0001   0.0001
               457       457       457      445       456       457      454

AUTONOMY   0.34118   0.15683   0.12454  0.01132   0.44978   0.43786  0.27796
            0.0001    0.0008    0.0077   0.8118    0.0001    0.0001   0.0001
               457       457       457      445       456       457      454

JFEEDBAK   0.47089   0.18603    0.1868  0.00404   0.49731   0.47663  0.39912
            0.0001    0.0001    0.0001   0.9323    0.0001    0.0001   0.0001
               457       457       457      445       456       457      454

COWORK     0.44911   0.17035   0.19318  0.07601   0.47404   0.39002  0.34412
            0.0001    0.0003    0.0001   0.1097    0.0001    0.0001   0.0001
               456       456       456      444       455       456      453

SUPER      0.37198    0.0629   0.18053  0.05219   0.29896   0.31106  0.63326
            0.0001    0.1795    0.0001    0.272    0.0001    0.0001   0.0001
               457       457       457      445       456       457      454

LEAD       0.50632   0.17901   0.23372  0.03757   0.59496   0.26438  0.29824
            0.0001    0.0001    0.0001   0.4292    0.0001    0.0001   0.0001
               454       454       454      445       453       454      454

CDSATIS    0.49791   0.28096   0.23888  0.04172   0.55297    0.4481  0.39963
            0.0001    0.0001    0.0001     0.38    0.0001    0.0001   0.0001
               454       454       454      445       453       454      454

CARSATIS   0.29941   0.18109   0.19127  0.12319   0.27897   0.20039  0.31704
            0.0001    0.0001    0.0001   0.0093    0.0001    0.0001   0.0001
               457       457       457      445       456       457      454

OFF_AV     0.11765   0.01123   0.13274 -0.05185   0.15915   0.04306  0.15630
            0.0118    0.8107    0.0045   0.2750    0.0006    0.3584   0.0008
               457       457       457      445       456       457      454
           TASKSIG  DEALOTH AUTONOMY JFEEDBAK   COWORK    SUPER     LEAD

INTEREST   0.0446  0.08228  0.01132  0.00404  0.07601  0.05219  0.03757
           0.3479   0.0829   0.8118   0.9323   0.1097    0.272   0.4292
              445      445      445      445      444      445      445

VARIETY    0.5679  0.59883  0.44978  0.49731  0.47404  0.29896  0.59496
           0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
              456      456      456      456      455      456      453

TASKID    0.35008  0.21648  0.43786  0.47663  0.39002  0.31106  0.26438
           0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
              457      457      457      457      456      457      454

AFEEDBAK  0.28504  0.28725  0.27796  0.39912  0.34412  0.63326  0.29824
           0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
              454      454      454      454      453      454      454

TASKSIG         1  0.55465  0.40575  0.48647  0.43817  0.34165  0.47981
                0   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
              457      457      457      457      456      457      454

DEALOTH   0.55465        1  0.36516  0.35632  0.47815  0.28433  0.49037
           0.0001        0   0.0001   0.0001   0.0001   0.0001   0.0001
              457      457      457      457      456      457      454

AUTONOMY  0.40575  0.36516        1   0.4565  0.46706  0.39582  0.40458
           0.0001   0.0001        0   0.0001   0.0001   0.0001   0.0001
              457      457      457      457      456      457      454

JFEEDBAK  0.48647  0.35632   0.4565        1  0.41676  0.33954  0.44949
           0.0001   0.0001   0.0001        0   0.0001   0.0001   0.0001
              457      457      457      457      456      457      454

COWORK    0.43817  0.47815  0.46706  0.41676        1  0.42215  0.44795
           0.0001   0.0001   0.0001   0.0001        0   0.0001   0.0001
              456      456      456      456      456      456      453

SUPER     0.34165  0.28433  0.39582  0.33954  0.42215        1  0.36952
           0.0001   0.0001   0.0001   0.0001   0.0001        0   0.0001
              457      457      457      457      456      457      454

LEAD      0.47981  0.49037  0.40458  0.44949  0.44795  0.36952        1
           0.0001   0.0001   0.0001   0.0001   0.0001   0.0001        0
              454      454      454      454      453      454      454

CDSATIS   0.51084  0.37246  0.57997  0.50413  0.50875   0.4726   0.5416
           0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
              454      454      454      454      453      454      454

CARSATIS  0.27516  0.20556  0.38478  0.23237  0.30745  0.37182  0.27036
           0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
              457      457      457      457      456      457      454

OFF_AV    0.15164  0.12881  0.04243  0.10176  0.07020  0.06967  0.05739
           0.0011   0.0058   0.3655   0.0296   0.1344   0.1370   0.2223
              457      457      457      457      456      457      454
           CDSATIS CARSATIS   OFF_AV

INTEREST   0.04172  0.12319 -0.05185
              0.38   0.0093   0.2750
               445      445      445

VARIETY    0.55297  0.27897  0.03582
            0.0001   0.0001   0.4454
               453      456      456

TASKID      0.4481  0.20039 -0.01363
            0.0001   0.0001   0.7714
               454      457      457

AFEEDBAK   0.39963  0.31704  0.06325
            0.0001   0.0001   0.1785
               454      454      454

TASKSIG    0.51084  0.27516  0.01409
            0.0001   0.0001   0.7638
               454      457      457

DEALOTH    0.37246  0.20556  0.12881
            0.0001   0.0001   0.0058
               454      457      457

AUTONOMY   0.57997  0.38478  0.04243
            0.0001   0.0001   0.3655
               454      457      457

JFEEDBAK   0.50413  0.23237  0.10176
            0.0001   0.0001   0.0296
               454      457      457

COWORK     0.50875  0.30745  0.07020
            0.0001   0.0001   0.1344
               453      456      456

SUPER       0.4726  0.37182  0.06967
            0.0001   0.0001   0.1370
               454      457      457

LEAD        0.5416  0.27036  0.05739
            0.0001   0.0001   0.2223
               454      454      454

CDSATIS          1  0.42037  0.07150
                 0   0.0001   0.1282
               454      454      454

CARSATIS   0.42037        1  0.13936
            0.0001        0   0.0028
               454      457      457

OFF_AV     0.07150  0.13936        1
            0.1282   0.0028        0
               454      457      457
```

APPENDIX D

MEAN RATINGS OF CHARACTERISTICS BY DEPARTMENT AND RANK

NOTES: Numbers in parenthesis are standard deviations

- + Indicates the referenced department has significantly ($\alpha = .05$) more of that characteristic than the department named in the column.
- - Indicates the referenced department has significantly ($\alpha = .05$) less of that characteristic than the department named in the column.

	Admin	*Eng*	*Ops*	*PW*	*Safety*	*Supply*
N	*107*	*61*	*165*	*43*	*29*	*28*
Job Characteristics						
CDSATIS	3.24	4.69	3.57	3.80	3.71	3.36
	(1.26)	(0.60)	(1.24)	(1.16)	(1.26)	(1.50)
VARIETY	3.46	4.47	3.30	3.85	3.99	3.06
	(1.05)	(0.59)	(1.05)	(0.89)	(0.76)	(1.17)
TASKID	3.54	4.02	3.60	3.61	3.38	3.60
	(1.08)	(0.82)	(3.60)	(1.06)	(0.98)	(1.01)
TASKSIG	3.98	4.70	4.04	4.16	4.34	3.80
	(0.95)	(0.46)	(0.94)	(1.02)	(0.56)	(1.05)
AUTONOMY	3.73	4.38	3.56	3.98	4.20	3.68
	(0.93)	(0.65)	(0.99)	(0.73)	(0.74)	(0.98)
JFEEDBAK	3.34	4.24	3.26	3.47	3.21	3.29
	(0.91)	(0.69)	(0.98)	(0.92)	(0.89)	(1.19)
DEALOTH	4.17	4.81	4.17	4.50	4.59	4.11
	(0.93)	(0.35)	(0.90)	(0.65)	(0.35)	(0.79)
AFEEDBAK	2.94	3.46	3.11	3.38	3.08	2.79
	(1.02)	(0.94)	(1.02)	(0.97)	(1.07)	(1.04)
LEAD	3.20	4.75	3.08	4.19	3.33	3.46
	(1.35)	(0.47)	(1.32)	(0.98)	(1.06)	(1.45)
PRO_AV	1.44	4.46	2.78	1.65	3.93	1.79
	(0.95)	(1.04)	(1.47)	(1.19)	(1.25)	(1.26)
PRO_OFF	4.00	4.62	3.52	3.98	3.83	3.79
	(1.15)	(0.69)	(1.17)	(1.18)	(1.20)	(1.52)
AVKSA	1.08	3.33	2.19	1.26	3.03	1.00
	(0.39)	(1.52)	(1.65)	(0.82)	(1.80)	(0.00)
OFFKSA	2.04	3.20	2.23	1.67	2.00	1.46
	(1.50)	(1.59)	(1.53)	(1.21)	(1.41)	(1.10)

Job Characteristics Mean Scores by Department

	Admin	*Eng*	*Ops*	*PW*	*Safety*	*Supply*
N	*107*	*61*	*165*	*43*	*29*	*28*
Management Characteristics						
SUPER	3.70	3.93	3.75	3.82	3.82	3.46
	(1.06)	(0.80)	(0.96)	(1.09)	(1.15)	(1.26)
COWORK	4.05	4.64	3.97	4.15	4.38	3.73
	(0.72)	(0.44)	(0.71)	(0.71)	(0.49)	(0.87)
CDTIME	3.07	3.84	3.04	2.93	3.52	2.86
	(1.11)	(1.25)	(1.23)	(1.30)	(1.24)	(1.24)
CDASSIGN	2.91	4.02	3.15	2.93	3.66	2.36
	(1.31)	(0.95)	(1.12)	(1.22)	(1.17)	(1.31)
NO_CD	2.96	1.93	2.59	2.58	2.17	2.50
	(1.45)	(1.15)	(1.24)	(1.47)	(1.17)	(1.50)
OERBAL	2.01	2.21	1.92	1.93	1.90	1.79
	(0.90)	(0.76)	(0.80)	(0.88)	(0.72)	(0.74)
Individual Characteristics						
RANK	2.73	3.18	2.72	2.74	2.66	2.93
	(0.92)	(0.62)	(0.75)	(0.85)	(0.72)	(0.86)
AGE	2.97	3.05	2.94	2.93	3.45	3.25
	(1.01)	(0.90)	(0.98)	(1.08)	(1.02)	(1.04)
OFF_AV	2.85	3.05	2.73	3.07	2.59	2.46
	(1.16)	(0.99)	(1.08)	(1.06)	(0.95)	(1.14)
QUAL	2.59	3.52	2.84	2.86	3.17	2.96
	(1.28)	(1.01)	(1.22)	(1.17)	(1.00)	(1.29)

Management and Individual Characteristics Mean Scores by Department

	ENS	LTJG	LT	LCDR	CDR
N	13	158	202	73	11
Job Characteristics					
CDSATIS	3.81	3.57	3.71	3.77	3.90
	(1.16)	(1.22)	(1.31)	(1.24)	(1.02)
VARIETY	3.69	3.30	3.64	4.06	3.88
	(1.27)	(0.98)	(1.12)	(0.86)	(1.10)
TASKID	4.05	3.63	3.62	3.64	3.30
	(1.15)	(1.08)	(0.98)	(0.91)	(1.18)
TASKSIG	4.49	4.04	4.14	4.31	4.42
	(0.60)	(0.89)	(0.91)	(0.88)	(1.21)
AUTONOMY	3.95	3.86	3.77	3.88	4.00
	(0.93)	(0.92)	(0.96)	(0.94)	(0.79)
JFEEDBAK	3.28	3.34	3.43	3.55	3.73
	(0.87)	(0.88)	(1.03)	(1.07)	(1.21)
DEALOTH	4.21	4.18	4.32	4.59	4.73
	(1.17)	(0.89)	(0.81)	(0.49)	(0.61)
AFEEDBAK	3.59	3.17	3.06	3.01	3.63
	(1.07)	(0.99)	(1.02)	(1.03)	(0.76)
LEAD	3.12	2.99	3.63	4.12	4.60
	(1.33)	(1.30)	(1.33)	(1.02)	(0.97)
PRO_AV	2.31	2.13	2.84	2.88	2.36
	(1.65)	(1.42)	(1.67)	(1.65)	(1.80)
PRO_OFF	4.31	3.61	3.90	4.25	4.45
	(1.18)	(1.20)	(1.21)	(1.00)	(1.21)
AVKSA	1.15	1.52	2.24	2.25	2.09
	(0.55)	(1.17)	(1.66)	(1.65)	(1.70)
OFFKSA	1.15	1.89	2.35	2.41	3.45
	(.055)	(1.38)	(1.61)	(1.52)	(1.75)

Job Characteristics Mean Scores by Rank

	ENS	*LTJG*	*LT*	*LCDR*	*CDR*
Management Characteristics					
SUPER	4.15	3.81	3.71	3.72	3.93
	(0.81)	(0.98)	(1.04)	(1.03)	(0.97)
COWORK	4.26	4.05	4.15	4.12	4.33
	(0.72)	(0.67)	(0.76)	(0.70)	(0.68)
CDTIME	2.69	2.96	3.22	3.40	4.18
	(2.69)	(1.15)	(1.24)	(1.44)	(0.75)
CDASSIGN	3.46	2.99	3.21	3.38	3.36
	(1.39)	(1.21)	(1.20)	(1.30)	(1.36)
NO_CD	3.08	2.79	2.45	2.15	2.27
	(1.04)	(1.32)	(1.36)	(1.40)	(1.56)
OERBAL	2.15	1.99	1.86	2.10	2.64
	(0.80)	(0.80)	(0.82)	(0.85)	(0.67)
Individual Characteristics					
AGE	2.23	2.46	2.99	4.30	4.45
	(0.60)	(0.61)	(0.88)	(0.72)	(0.52)
OFF_AV	3.46	2.83	2.80	2.71	3.09
	(1.13)	(1.04)	(1.07)	(1.11)	(1.38)
QUAL	1.15	2.11	3.21	4.10	3.64
	(0.38)	(0.97)	(0.91)	(1.16)	(1.21)

Management and Individual Characteristics Mean Scores by Rank

	Eng	*Ops*	*PW*	*Safety*	*Supply*
Job Characteristics					
CDSATIS	-	-	-		
VARIETY	-		-	-	
TASKID	-				
TASKSIG	-			-	
AUTONOMY	-			-	
JFEEDBAK	-				
DEALOTH	-		-	-	
AFEEDBAK	-		-		
LEAD	-		-		
PRO_AV	-	-	-	-	
PRO_OFF	-	-			
AVKSA	-	-		-	
OFFKSA	-				
Management Characteristics					
SUPER					
COWORK	-			-	-
CDTIME	-				
CDASSIGN	-			-	+
NO_CD	+	+		+	
OERBAL					
Individual Characteristics					
RANK	-				
AGE				-	
OFF_AV					
QUAL	-			-	

Significant Differences in Administration Department Characteristics

Job Characteristics	Admin	Ops	PW	Safety	Supply
CDSATIS	+	+	+	+	+
VARIETY	+	+	+	+	+
TASKID	+	+	+	+	
TASKSIG	+	+	+		+
AUTONOMY	+	+	+		+
JFEEDBAK	+	+	+	+	+
DEALOTH	+	+	+		+
AFEEDBAK	+	+			+
LEAD	+	+	+	+	+
PRO_AV	+	+	+		+
PRO_OFF	+	+	+	+	+
AVKSA	+	+	+		+
OFFKSA	+	+	+	+	+
Management Characteristics					
SUPER					+
COWORK	+	+	+		+
CDTIME	+	+	+		+
CDASSIGN	+	+	+		+
NO_CD	−	−	−		
OERBAL		+			+
Individual Characteristics					
RANK	+	+	+	+	
AGE					
OFF_AV		+			+
QUAL	+	+	+		+

Significant Differences in Engineering Department Characteristics

	Admin	Eng	PW	Safety	Supply
Job Characteristics					
CDSATIS	+	-			
VARIETY		-	-	-	
TASKID		-			
TASKSIG		-			
AUTONOMY		-	-	-	
JFEEDBAK		-			
DEALOTH		-	-	-	
AFEEDBAK		-			
LEAD		-	-		
PRO_AV	+	-	+		+
PRO_OFF	-	-	-		
AVKSA	+	-	+	-	+
OFFKSA		-	+		+
Management Characteristics					
SUPER					
COWORK		-		-	
CDTIME		-			
CDASSIGN		-		-	+
NO_CD	-	+			
OERBAL		-			
Individual Characteristics					
RANK		-			
AGE				-	
OFF_AV		-			
QUAL		-			

Significant Differences in Operations Department Characteristics

		Admin	*Ops*	*Eng*	*Safety*	*Supply*
Job Characteristics						
	CDSATIS	+		-		
	VARIETY	+	+	-		+
	TASKID			-		
	TASKSIG			-		
	AUTONOMY		+	-		+
	JFEEDBAK	+	+	-		+
	MPSADD		+	-		
	DEALOTH	+	+	-		+
	AFEEDBAK	+				+
	LEAD	+	+	-	+	+
	PRO_AV		-	-	-	
	PRO_OFF		+	-		
	AVKSA		-	-	-	
	OFFKSA		-	-		
Management Characteristics						
	SUPER					
	COWORK			-		+
	CDTIME			-	-	
	CDASSIGN			-	-	+
	NO_CD			+		
	OERBAL					
Individual Characteristics						
	RANK			-		
	AGE				-	
	OFF_AV					+
	QUAL			-		

Significant Differences in PW Department Characteristics

	Admin	Ops	PW	Eng	Supply
Job Characteristics					
CDSATIS				-	
VARIETY	+	+		-	+
TASKID				-	
TASKSIG	+				+
AUTONOMY	+	+			+
JFEEDBAK				-	
DEALOTH	+	+			+
AFEEDBAK					
LEAD			-	-	
PRO_AV	+	+	+		+
PRO_OFF				-	
AVKSA	+	+	+		+
OFFKSA				-	
Management Characteristics					
SUPER					
COWORK	+	+			+
CDTIME			+		+
CDASSIGN	+	+	+		+
NO_CD	-				
OERBAL					
Individual Characteristics					
RANK				-	
AGE	+	+	+		
OFF_AV					
QUAL	+				

Significant Differences in Safety Department Characteristics

	Admin	Ops	PW	Safety	Eng
Job Characteristics					
CDSATIS					–
VARIETY			–	–	–
TASKID					
TASKSIG				–	–
AUTONOMY				–	–
JFEEDBAK					–
DEALOTH			–	–	–
AFEEDBAK			–		–
LEAD			–		–
PRO_AV		–		–	–
PRO_OFF					–
AVKSA		–		–	–
OFFKSA		–			–
Management Characteristics					
SUPER					–
COWORK	–		–	–	–
CDTIME				–	–
CDASSIGN	–	–	–	–	–
NO_CD					
OERBAL					–
Individual Characteristics					
RANK					
AGE					
OFF_AV			–		–
QUAL					–

Significant Differences in Supply Department Characteristics

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